17/17

REPORT

ON THE WORKING OF THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR

1963

N.S.P.
R.A.M.
H.M.T.

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DEPARTMENT OF AGRICULTURE

93 Archbishop Street,
Valletta — Malta.

25th April, 1964

Sir,

I have the honour to transmit to you my Report on the working of the Department of Agriculture for the calendar year 1963.

I have the honour to be,
Sir,
Your obedient servant,

V. J. CASTILLO,
Director of Agriculture

The Honourable,
Minister of Agriculture,
Power and Communications,
VALLETTA.

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STAFF LIST OF SENIOR OFFICERS
AS ON 31st DECEMBER, 1963

Administrative and Executive Officers

Major Victor J. Castillo, E.D. ...	Director of Agriculture
Mr Joseph Amato Gauci	Assistant Director of Agriculture
Mr Anthony S. Farrugia, B.Sc. (Econ.) B.Com.	Administrative Officer
Mr Carmel A. Libreri, D.P.A. ...	Higher Executive Officer
Mr Edgar Causon	Temporary Higher Executive Officer
Mr Carmel Spiteri	Temporary Higher Executive Officer
Mr Thomas Abela Fitzpatrick, D.P.A.	Executive Officer
Mr Carmel Callus	Executive Officer
Mr George Busuttil	Executive Officer

Technical Officers

Mr Andrè Cassar, B.Sc., B.V.Sc., M.R.C.V.S.	Principal Govt. Vet. Surgeon and Director of Vet. Service
Mr George Cousin	Supt. of Public Gardens and Plantations
Mr John Debrincat	Senior Agricultural Officer
Mr Joseph Frendo	Chief Fisheries Officer
Mr Charles Galea Enriquez, B.A., M.Sc., F.R.Econ.S.	Agricultural Enonomist
Dr Gerald J. Peralta, D.Sc. (Agric.), F.Z.S.	Plant Pathologist
Mr Francis P. Portelli, B.Sc. (Hort.), B.Pharm.	Horticulturist
Mr Louis J. Saliba, B.Sc., B.Pharm., B.Sc. (Hon.) Ent., F.R.E.S. ...	Plant Pathologist and Entomologist
Mr A. Scicluna Spiteri, B.Pharm., B.Sc. (Agric.), M.Sc., F.R.M.S. ...	Agricultural Chemist
Mr S. J. Zammit, F.R.H.S.	Supt. of Government Farms
Mr Edward Ebejer Slythe, C.D.D., C.D.A.	Higher Agricultural Officer
Mr Victor T. Restall, B.Sc., M.R.C.V.S.	Assistant Government Veterinary Surgeon
Mr Joseph P. Buttigieg, C.D.A. ...	Agricultural Officer
Mr Saviour P. Camilleri, C.D.A. ...	Agricultural Officer
Mr Joseph Debattista, N.D.A., C.D.A., N.D.Agric.E., A.I.Agric.E.	Agricultural Officer
Mr Clive Simpson, N.D.A., C.D.A.	Agricultural Officer
Mr Dominic Sultana, N.D.A., C.D.A., N.C.P., C.C.P.	Agricultural Officer
Mr Victor Rossignaud	Agricultural Marketing Officer

United Kingdom Advisers

Mr Louis J. Littlejohn, B.Sc.(Hons.)	Chief Agricultural Advisory Officer

W.H.O. Expert

Mr Godfrey G. Alton, B.Sc., M.R.C.V.S.	Veterinary Bacteriologist

F.A.O. Expert

Mr Robert W. Crowther, B.Sc., M.R.C.V.S.	Animal Health Officer (Veterinary Laborator)

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I. INTRODUCTION

MINISTERIAL ACTIVITIES

Associate Membership in the Food and Agriculture Organization

On the 19th November, 1963, with 88 votes in favour and 1 against, Malta was admitted to the F.A.O. as Associate Member with the proviso that she will automatically achieve Full Membership on attaining independence.

The Hon. Minister of Agriculture, Power and Communications thanked the Conference on behalf of the Government of Malta and on the following day he delivered a short talk on Agriculture in Malta Economic Development. Dr. Caruana said that Malta because of its position has since time immemorial been a strong fortress in the hands of the foremost Mediterranean power. Its economy has been tied down to the defence requirements of the protecting power. There has however been a reappraisal of Malta's strategic importance which has brought about a radical change in the national economy, which has now to be based on light industries, tourism and agriculture.

Help from Great Britain

Help from Great Britain had been sought and obtained. Greater assistance was requested for farmers and fishmermen. Farmers need help, in a number of ways; to erect glasshouses for the growing of out of season crops, to put up poultry units, to set irrigation equipment, to economize in water consumption, to save labour cost and they need very badly a number of agricultural mechanical equipment. Fishermen look for larger craft, better engines for their boats and more modern fishing tackle.

Another urgent matter was Boschetto Gardens. Water from springs which reached the trees in these areas was deviated to meet the ever increasing water requirements for human consumption. But the result would be the gradual but certain destruction of Boschetto Garden. What has hirtherto been the Island's premier park would definitely become a derelict waste land before this decade is over, had not the Honourable Minister energetically intervened with great success. Terraces have since been rebuilt, water tanks have been reconstructed and a truck, a moble pump and three bowers are being provided. By these means the position has been retrieved and trees, centuries old, are doing well again. Thus it is possible for the Mnarja Festivities to continue to be held in the historical enchanting silvan surroundings they have hitherto been kept.

The amounts in connection with these activities that were granted following ministerial sponsorship include:—

1. £10,000 under Grants to farmers
2. £22,000 under Grants to Fishermen
3. £33,000 under Loans to Fishermen
4. £10,000 under Improvements to Public Gardens

Assistance from Italy

The Italian Government has been asked and has agreed to provide fellowships for technical officers in the Department and two senior officers are expected to take advantage of this early in January.

Two Agricultural officers who were granted bursaries for a period of about one year from the Italian and French Governments completed their training.

Besides, hopes have been raised that plants in great number will also be made available free of charge in the near future. But such gifts can only follow consultations between technical experts of both sides and the Italian Government has already signified its willingness to co-operate and send in due time the experts needed for such missions.

Contact with F.A.O.

F.A.O. was reguested to help the Department with certain experts. Accordingly, Dr. R. Crowther, a Laboratory Veterinarian has been sent to set up and organize a Diagnostic Laboratory. Others are due to follow early next year.

Fellowships were granted to a number of senior officers in the Department. These officers have thus been given the opportunity to see for themselves what is being done abroad in the lines in which they are specialising. Even outsiders have been invited to go overseas and have discussions with leaders of movements similar to their own. I am glad to state that these invitations were accepted and that as a result these leaders are now in more cordial contact with their official counterpart in the Department of Agriculture and Fisheries.

Tripoli in the picture

The Honourable Minister of Agriculture, Power and Communications was invited to attend a Seminar in Agricultural Education which was held in Tripoli during the period 29th September to 5th October. The Minister, who was accompanied by his Private Secretary and by the Agricultural Chemist, took an active part in the Seminar and chaired the committee on resolutions, reports and recommendations.

Water Supply to farmers

Water has been supplied to farmers by bowsers during the dry summer spells. It is true that the ideal stage has not yet been reached, but this measure was of immense benefit to farmers who speak highly of such service. Crops that would otherwise wither and die are now being saved and put on the market with resulting great benefit to both grower and consumer.

II. THE DEPARTMENT OF AGRICULTURE & FISHERIES

In 1963, the Department of Agriculture and Fisheries synchronized its activities, to a great extent. Staff relations were also very cordial and mutual understanding prevailed. The Director assumed full control of all the Sections of the Department, as newly constituted, and from time to time outlined the policy to be followed. The Assistant Director supervised the various branches, and saw that all went well. The Administrative Officer gave the assistance needed and the Chief Fisheries Officer assumed responsibility for the execution of a sound fisheries policy.

The Department is now divided into the following distinct divisions each with a senior officer responsible for the proper execution of its functions:—

A. *Agriculture*

i. Administrative Division under the Assistant Director of Agriculture

ii. Advisory and Extension Service under the Higher Agricultural Officer

iii. Veterinary Services under the Principal Government Veterinary Surgeon

iv. Diagnostic Laboratory under the Laboratory Veterinarian

v. Brucellosis Laboratory under the Veterinary Bacteriologist

vi. Horticulture Division under the Horticulturist

vii. Public Gardens, Plantations and Afforestations Division under the Supt. of Public Gardens

viii. Marketing Division under the Agricultural Economist

ix. Crop Protection Division under the Plant Pathologist and Entomologist

x. Government Farms and Stock Station Division under the Supt. of Government Farms

xi. Viticulture and Oenology Division under the Plant Pathologist

xii. Land and Water Use Division under the Agricultural Chemist

xiii. Gozo Division under the Senior Agricultural Officer

xiv. Co-operative Societies Division under the Officer in charge of Co-operative Societies.

B. *Fisheries*

xv. Fisheries Division under the Chief Fisheries Officer

A. *Agriculture*

i) *Administration Division*

The Administration Division, which is under the direct responsibility of the Assistant Director of Agriculture, includes a number of Sections. The chief being: —

a) Registry — The Registry is the medium through which all Divisions operate. On the prompt action of the personnel of this Section all other Divisions depend. The quick movement of files contributes appreciably to the general efficiency of the Department.

b) Expenditure, Personnel Section — This Section keeps records of all expenditure, checks all vouchers and deals with personnel matters including promotions

c) Supplies Section — This Section controls the stores, places indents with the Crown Agents, prepares tender forms, draws up specifications, frames conditions for quotations, approves requisitions for stores, etc.

d) Pitkali Accounts, Revenue, Loans and Grants Section — This Section receives cash in respect of sales of vegetables and fruit on behalf of farmers, collects revenue due to the Department, and advances loans and grants in accordance with recommendations made by the Loans and Grants Commission. Payment to farmers whether by cheque or by cash is also made by this Section.

ii) *Advisory and Extension Service Division*

This Division is under the charge of a Higher Agricultural Officer who is assisted by four Agricultural Officers. The Island has been divided into regions and each Agricultural Officer has been allotted one region to look after. The duties of these officers are very wide and anything affecting animal husbandary, agriculture, and floriculture is a matter with which they are expected to deal efficiently. In certain particular cases they are to refer the matter to the appropriate specialised Division concerned.

The Information Service has become closely related to this Section and Agricultural Officers frequently give talks in the Sunday Broadcasts on the Rediffusion.

iii) *Veterinary Services Division*

The Veterinary Services Division is run by the Principal Government Veterinary Surgeon assisted by one other Veterinary Surgeon and a number of subordinate staff.

Prevention, control and eradication of animal diseases in all their ramifications fall within the sphere of this Division.

iv) *The Diagnostic Laboratory*

With F.A.O. funds Dr. R. Crowther, a Laboratory Veterinarian, is setting up a well-equipped diagnostic laboratory. It is already apparent that in the furture this unit will have a most important role to play in safeguarding the health of the local animal population.

v) *The Brucellosis Laboratory*

In this Laboratory, which is under the control of Dr. G. Alton, a W.H.O. Expert, research work is being conducted on Brucella Melitensis.

Work has reached such an advanced stage as to give us every hope of starting in the immediate future field work with a view to immunizing goats against the Brucella Melitensis.

vi) *The Horticulture Division*

This is a new phase in the development of this line of agriculture. Horticultural products have already made their token appearance on the export market and comments have been favourable. This is considered to be a good omen for the future expansion that is being eagerly planned and energetically sustained.

The Horticulturist is the officer responsible for the methodical development of the scheme envisaged in the Second 5-Year Development Plan due to start as from April, 1964.

vii) *The Public Gardens, Plantations and Afforestations*

The Superintendent of Public Gardens has duties which have become too onerous for one man to carry. The afforestation of many a waste site necessarily demands his personal attention quite often and this cannot be done except at the expense of some of his other manifold duties. It is however hoped that it should be possible to strengthen this Division with another key man before long.

All public gardens, His Excellency's private gardens at San Anton and at Verdala, nurseries, plantations, etc. come within the shpere of the Superintendent's activities. The Superintendent is also expected to give advice to amateur gardeners whenever such advice is sought.

viii) *Marketing Division*

The Agricultural Economist is in charge of this Division. This Officer is required to advise on the supply position of agricultural products on the local markets and on possible openings for exports.

The control of the Pitkaliji fall within the activities of this Division. The greater part of the farmers consign their produce to the Pitkali for sale at the Centres by auction.

ix) *The Crop Protection Division*

This Division has been gradually contracting, following the department's policy of encouraging farmers to equip themselves with the necessary spraying machines.

It is therefore again gradually reverting to its former role of giving demonstrations and furnishing advice to farmers and carrying out some spraying work on behalf of third parties.

The Laboratory is now fully equipped and can deal with all normal day to day cases that crop up.

x) *The Government Farms and Stock Stations*

The Superintendent Government Farm controls all experiments carried out under his directions. These include trials on varieties of seeds, on breeds of animals and on flocks of birds. Knowledge gained on the farm is transmitted on to farmers and herdsmen through the Extension and Information Services.

Stud services are also provided. Quality seeds and pedigree animals are sold at reduced prices to growers and breeders. Carnations and other flowers grown under polythene are sold to florists. These flowers are grown mainly for demonstrational purposes and sales are incidental. During this year some carnations grown at the Farm were exported to the U.K. by Florists.

xi) *Viticulture and Oenology*

Viticulture and Oenology are being increasingly developed. A stage has now been reached where it has been considered opportune to start thinking about Maltese Typical Wines. For this purpose a considerable number of vine rootlings is being grown at Buskett and careful records of progress of each variety is being kept. In time it should be possible to select those that suit best local wine manufacturing needs for the home and foreign markets.

xii) *Land and Water Use Division*

The Agricultural Chemist is engaged on studying the problems of water supply and soil nutrition. A Laboratory is gradually being equipped. Experiments are being carried out as yet on a modest scale but the foundations are being laid for future development.

This section looks also after soil preservation and directs the disposal of fertile soil recovered from building sites and other places.

xiii) *Gozo Division*

Gozo is under the responsibility of the Senior Agricultural Officer. He is in charge of the Livestock Centre which provides stud services, pedigree animals, quality seeds, etc. to farmers and breeders. Afforestation works fall also within his spere of activities.

His other duties include the planting of trees, the keeping of nurseries and the looking after of public gardens, roundabouts, strips, etc.

xiv) *The Co-operative Division*

Co-operatives are supervised by a Higher Executive Officer who is assisted by a number of inspectors.

Auditing is their main task but advice is frequently given to those seeking it.

B. *Fisheries*

xv) *The Fisheries Division*

The Chief Fisheries Officer is the highest ranking Officer in the Division. He supervises over the activities of the various sections making up the division and sees that the best cordial relations between his staff and fishermen subsist.

III. AGRICULTURAL DEVELOPMENT

COLONIAL DEVELOPMENT AND WELFARE SCHEMES

A. *Agriculture*

1. *Cattle Disease Eradication Scheme*

It has been felt as far back as 1959 that the dairy industry in Malta and Gozo should be freed from the losses it was sustaining because of the presence of Tuberculosis and Brucellosis in the dairy herds.

Accordingly a scheme which provided for the slaughter of affected cattle and compensation to owners was prepared, submitted to the Secretary of State for his approval and the sum of £140,000 was provided to be spent over the period 1959-1964.

Progress because of the voluntary nature of the scheme was slow and it became subsequently evident that no marked headway would be made unless legislation were brought to bear. Eventually, Regulations under the Prevention of the disease Ordinance (Chapter 59) gave the Director of Agriculture the necessary authority, and matters started moving fast.

Slaughtered diseased cows are normally replaced by pedigree pregnant heifers from Holland. During the year under review a very limited number of such heifers could be imported owing to the prevalence of Foot and Mouth Disease in Holland. Notwithstanding this and other difficulties all cows in herds suppying milk to the Milk Marketing Undertaking are considered generally free from Tuberculosis and Brucellosis. The benefits resulting from this scheme to the nation, the consumer and the herdsman, are inestimable.

2. *Animal Vaccination Scheme*

The work under this scheme started in 1956 and has continued ever since. The objective is to control and eventually eradicate 'Mediterranean Fever' from the human and animal population in those places where the disease has become endemic, as in Malta.

The Laboratory stage is now almost complete and field work on a more ambitious scale is the next phase.

Meanwhile it has been established through experiments that the public health hazard resulting from Brucella Melitensis infection in cattle is high.

Investigations to develop a brucella vaccine that produces neither serological reaction nor abortion in vaccinated goats are being actively pursued.

It is hoped that future field work will help materially towards a much better understanding of the problems that have to be solved.

3. *Incentive Grants*

The object of such grants is to provide an incentive strong enough to induce the farmer, the herdsman and the florist to buy modern equipment, to grow quality seeds, to export in appropriate containers, to assume those trade risks, which without such aids, they would never run.

Relevant incentives this year include a 30% grant on Milk Cooling Plants, a subsidy on boxes for export of ware potatoes, purchase of cardboard containers for the export of carnations, and the erection of a Milk Parlour Unit for demonstrational purposes.

4. *Expenses in connection with Experts*

The Chief Agricultural Advisory Officer continued to help with his advice throughout the year. The Horticultural Advisory Officer on the other hand after having completed his tour of office had his term extended by a further period up to 3rd June, 1963.

5. *Training of personnel abroad*

This scheme is complementary to the one last preceding. It aims at giving facilities to local officers to train abroad in those professions in which no practical training can be given them locally.

During the year one such trainee obtained the C.D.A. and was on his return appointed an Agricultural Officer.

There are two trainees at present in the U.K. One is training to become Veterinary Surgeon and one an Agricultural officer.

6. *Adopted Farms*

The policy is to develop Government tenements occupied by farmers which could serve as a show window to the farmers living in the vicinity. It was not very easy to find farms for the development envisaged. Still, no less than seven have received benefits under the scheme. These farms are situated over different localities in both Malta and Gozo.

7. *Grants to farmers*

About £52,000 have been given as grants. Out of this sum more than £17,000 have been made this financial year. Mostly, the money was provided for the erection of poultry units, closely followed by the construction of glass-houses. Overhead irrigation equipment and rotary cultivators were the next items of importance in expenditure.

8. *Equipment for crop protection contract spraying service.*

This service has achieved the objective it primarily set out to attain namely, to persuade farmers to carry out their own spraying.

As a result, custom fell considerably over the years and the squads forming this service have been regularly curtailed.

A quantity of new equipment for the service was made available during the year.

9. *Afforestation*

Since 1959, about £100,000 have been spent and about 33,000 trees have been planted. Many sites that were previously derelict have now become covered with olive trees.

Carob trees have also been planted in large numbers.

10 *Modernizing the Civil Abattoir*

Over the last five years, £18,000 have been spent towards modernizing the Civil Abattoir. More slaughter halls have been built, more equipment has been introduced and modern conveniences have been considerably improved.

11. *Improvements to Public Gardens*

The Boschetto Gardens watered by a number of natural springs were an ideal place for the growing of giant trees. The necessity for potable water forced the Water Works Department to alter the course of these springs with the result that trees, centuries old, started withering.

Bowsers have been ordered and water tanks have been constructed. By these means the trees will be regularly watered.

12. *Equipment for Agricultural Chemistry Laboratory*

The Agricultural Chemist started setting up an agricultural Chemistry Laboratory out of funds provided under Capital Expenditure.

Loan Scheme

13. *Loans to farmers*

Since 1959, about £165,000 were advanced as loans of which over £32,000 were made in 1963/64.

This financial year the bulk of the money went for the erection of poultry units, with glasshouse construction a close second.

B. *Fisheries*

Colonial Development and Welfare Schemes

1. *Grants to fishermen*

£11,480 were granted in connection with craft, another £3,678 in connection with engines and another £1,581 in connection with equipment. Thus a total sum of £16,739 was granted, during the financial year.

Colonial Grants

Sundry Works at Fishing Centres

About £2,000 were spent on improving a number of fishing centres. Winches were added, broken ones repaired and where necessary a number of sleepers were projected further down ramps into the sea to enable fishermen to lower and land their fishing boats with greater ease. A number of moles were also widened and general repairs and improvements were carried out where necessary.

Loans Scheme

Various sums have been made available as loans. These sums for the financial year 1963/64 totalled £19,134 for craft and £3,902 for equipment.

IV. RECURRENT ACTIVITIES

A. *Agriculture*

a) *Administration*

The Administration is headed by the Director of Agriculture and Fisheries. He is assisted by the Assistant Director of Agriculture. The Administrative Officer though mainly responsible for financial matters assists these two top senior officers in a number of ways.

b) *Advisory and Extension Service*

A nucleus of specialists has now been built and these are mainly engaged on investigational and experimental work. Their findings are passed on through the Extension Service to growers and breeders all over the islands.

The laboratories are always active. Post mortem examinations are carried out, vaccines against fowl diseases are manufactured, goats are vaccinated, guinea pigs are kept, insects kept alive in special containers are observed. Other chemicals are applied to a number of pests and the effects recorded, soil nutrition is constantly being studied, mulching experiments are being actively pursued, etc. As more equipment is acquired the laboratory activities will correspondingly increase.

Broadcasts have become a regular means of information and senior technical officers of the Department are not only preparing papers on subjects in which they specialize but are themselves going on the air and are frequently giving familiar chats on various subjects, such as improvement of the breed, quality seeds, soil analysis, water conservation, endemic diseases, etc.

c) *Government Farms*

Slowly but surely the Government Farms are assuming the role for which they are primarily intended, namely, that of experimentation, demonstration and production of pedigree animals and quality seeds. Through systematic culling and the introduction of new blood, a fine stock in many lines has been built up at the farms. Friesian sires are available for mating services, and occasionally Friesian calves are sold. Large White weaners reserved for breeding and for fattening are disposed of regularly and as a result the present swine breed in Malta has improved systematically. Saanen Billy goats are becoming ever more numerous, the kids being sold as fast as they become available, the Broad Breasted Turkeys have be-

come a regular feature in the farms and their eggs for hatching purposes are sold immediately they are laid, and New Zealand White and Flemish Giant Rabbits are being increased to meet the ever increasing demand for them. Day Old Chicks are sold by the thousand weekly. All these chicks are the offsprings of flocks originally purchased from U.K. accredited farms.

The production and sale of quality seeds is also doing well. Out of season carnations were successfully grown for the second year and token consignments will be exported during 1964.

d) *Gardens, Plantations and Afforestations*

The roundabouts and strips have become miniature gardens. The glacis at Porte des Bombes is planted with a large number of trees of many varieties and flowers are also planted in season. Roundabouts too have increased in size. Those leading to the airport are about an acre each. In them are planted a number of shrubs and annuals.

The number of trees along roads have increased considerably. Almost every nw road that is constructed is flanked with trees. Roads wihch extend for about a mile or over such as the Marsa-Pawla-Luqa Road contain over a thousand each. The Valley Road at B'Kara is another long road just constructed with trees on both of its side pavements.

Public Gardens have all been kept in good trim. Special attention has been given to San Anton and Buskett Gardens. His Excellency's private gardens at San Anton and Verdala have been given the attention they deserve.

Afforestations have been proceeded with. In all, over the last five years upwards of 35,000 trees have been planted. These have gone a long way to improve the landscape with their green foliage.

e) *Plant Protection*

Better equipment, a more modern laboratory and more efficient plant protection squads are now available. Greater care is paid to afforestations, plantations, gardens and crops generally. Greater use of chemicals is being made to combat pests.

Experiments to control woodborers which have wrought so much havoc among fruit trees in the past are giving good results. With the greater knowledge now becoming available it is hoped to minimize further the danger from these pests in the not distant future.

f) *Viticulture and Oenology*

Following the advice and help of Prof. H. Olmo a trainee has been sent to Davies University, California, U.S.A. to study Viticulture and Pomology.

Meanwhile, various plots of land have been planted with a variety of vines with a view to studying which are those which are most suitable to Malta. Gradualby growing select variety vines, local wines would be manufactured which could sell on the international markets as typical Malta wines.

g) *Marketing*

Marketing intelligence is being expanded with a view to increasing exports. Already exports have been increased in the case of potatoes, flowers, wine and tomatoes and tomato by-poducts.

Imports are being closely watched in order to be able to recommend appropriate protective action where this can be done without interfering with the country's welfare as a whole.

h) *Veterinary Services*

The Veterinary Services have done well and generally speaking no serious epidemics afflicted the animal or fowl population, during the year.

A Diagnostic Laboratory has now been set up and post mortem examination of animals and fowls suspected of having died of some disease has become a daily routine and where indications call for action, steps are invariably promptly taken. The stage has now been reached when vaccine against a number of poultry diseases could be manufactured locally. Measures are therefore being taken to start manufacturing these vaccines as quickly as possible.

Research into Brucella Melitensis continues. It may not be long before field would greatly assist in the development of a brucella vaccine that could give immunity to goats against the disease.

i) *Co-operatives*

Arrears in the auditing of Books of Accounts of Co-operative Societies were the stumbling block that militated against all progress. By dint of hard work and a sound policy the backload of arrears has been almost completely eliminated and the stage is now set for development.

j) *Pitkali*

Pitkali Stalls have been serving their purpose well and the Pitkali have been well patronized by farmers. Relations between Government Officials and Pitkali have been satisfactory and no disputes arose during the year.

B. *Fisheries*

k) *Fisheries*

The catch each year helps to diversify the food fare. When it is borne in mind that about £3,000,000 worth of fish are caught each year and that on this industry no less than 400 fishermen are engaged all the year round, the importance of the fishing industry becomes readily understandable. Nevertheless every year imports of fish reach £15,000. It is therefore the desire of those responsible to see that imports are completely eliminated and that the catch be increased. This seems to be a feasible and reasonable proposition. With this end in view boats of greater dimensions are being built.

V. THE ADVISORY AND EXTENSION SERVICE

Specialist Sections

The specialists following the acquisition of laboratory equipment are devoting more time on experiments and wider knowledge is being amassed than has hitherto been possible. This knowledge is constantly being passed on to herdsmen, farmers and florists all the year round, either by the specialists themselves or by means of the Extension Service Officers who serve as media between the specialists and those working in the fields.

Extension Service

Post college training with a view to giving the Agricultural officers practical experience is being constantly provided through the good offices of friendly countries and international organisations. Two of the five serving Agricultural officers have been on such training throughout the year, in Italy and France. These countries have been chosen because it is considered that the agricultural problems facing these countries are not dissimilar to those existing in Malta. The absence of these two officers for so long a period has however been greatly felt especially by those officers who had to take over from them their duties in addition to their own.

Advisory and Extension Work

The advisory and extension work comprises the following distinct activities: --

a) Technical advice

b) Practical extension work

c) Marketing Intelligence

a) *Technical advice*

The Agricultural officers tender their expert advice to breeders, farmers and florists on animal breeding, nutrition and management. To farmers they give expert advice on the growing of specialised crops under glass, in particular, and to florists they give practical demonstrations in the growing of out of season flowers for which the foreign markets show a preference.

b) *Practical Extension Work*

Malta is at present divided into four districts, each under the special attention of one Agricultural officer. In this way the Agricultural officer is sure to gain better knowledge of his frame and he would be in a better position to advise those breeders, farmers and florists of his region seeking his aid.

He is expected to help the community of his region in all their agricultural problems. By being in daily contact with them he can better advise them on better quality seeds, the breeding of purer stocks and the growing of the right type of flowers.

c) *Marketing Intelligence*

The cultivator of the soil is being taught that he should grow those vegetables for which the consumer shows a preference. He is being persuaded to grade his produce and to present it to the market in the way it is most likely to be preferred by the prospective buyers.

Through constant advice farmers are becoming more prone to diversify their crops. They are becoming aware that this measure renders prices more stable and gluts in particular items are becoming less pronounced.

The prices fetched on the international markets for particular crops such as potatoes, onions, gladioli, carnations etc. are closely watched and proper action is taken in time.

General Service

i) *Agricultural Officers*

The strength of the Agricultural Officers in Malta has been increased from 4 to 5. This was a much needed addition for the Extension work is daily increasing.

ii) *Loans and Grants*

The Loans Commission recommends money grants and loans to breeders farmers and florists. The Commission would in almost all cases require investigations to be made regarding such applications. These investigations are carried out by the Agricultural Officer whose work brings him in daily contact with all the farming community in his district.

iii) *Adopted Farms*

A number of farms are adopted each year by the Department of Agriculture. Here too, the services of the Agricultural officer are most essential. Indeed, he advices on the feasibility of each project in his district, and his advice is appreciated by those whose duty it is to decide the issue.

iv) *Farmers' Meetings*

Every fortnight a village is chosen at which a meeting is held. Opportunity is taken to tell farmers to call on the District Agricultural Officer and explain to him in detail their difficulties.

The Agricultral officer is their true friend and is invariably ready to help them solve their difficulties by every means open to him including recommendations for Government subsidies, incentives, loans, grants, etc. wherever he considers such recommendation to be necessary.

v) *Field machinery*

The rising labour costs demand a greater use of agricultural machinery. Accordingly, the beneficial effects of suitable farm machinery is periodically demonstrated to farmers and they are encouraged to buy and use such implements on their farms. Many have appreciated the need for the use of such machines and have become partly mechanised. Indeed, nowadays, tractors, rotavators and other machine equipment have become quite a common sight in the large fields.

vi) *Young Farmers Clubs*

The setting up of such rural clubs is desirable but the efforts of our Agricuultural Officers met with scant success.

vii) *Water Festival*

Water has restricted for centuries the expansion of agricultural activities in the Island. An attempt is therefore being made to increase the water supply for agricultural purposes by utilising the water collected in disued quarries.

In order to make farmers water minded an annual water festival is held in each village, by rotation. This year the festival was held at Siġġiewi and it proved to be a far greater success than the one held last year at Żurrieq.

VI. THE VETERINARY SERVICES SECTION

The Veterinary Services in these Islands are carried out by two Veterinary Surgeons in Malta assisted by a qualified Meat Inspector and three Veterinary Assistants and one Meat Inspector and one Veterinary Assistant in Gozo. Moreover a Veterinary Research worker, Dr. G. G. Alton and a Veterinary Bacteriologist, Dr. R. W. Crowther, are also working in Malta. The former is engaged in finding a suitable vaccine against Brucellosis in goats and the latter is engaged in carrying out diagnostic tests in poultry and swine.

Pending the filling of the post of Veterinery Surgeon due to the retirement of a Veterinary Surgeon in Gozo the following temporary arrangements were made:—

a) A Senior Health Officer from the Medical and Health Department in Gozo, who had been trained in Meat Inspection carries out meat ispection usually at 5.00 a.m.

b) The prophylactic vaccination of poultry and swine as well as the testing of cows for Tuberculosis and the taking of blood for the Agglutination test are carried out by the Veterinary Assistant and whenever a T.B. reactor is found, it is re-tested after a month's time by one of the Veterinary Surgeons.

c) One of the two Veterinary Surgeons in Malta also goes to Gozo twice a week.

The main activties of the Veterinary Services in Malta and Gozo fall under two main headings, i.e:—

a) *Activities in the Abattoir*

The activities in the Abattoir constitute an essential public service in so far as they safeguard the health of the population. In fact. by law, all animals are slaughtered by Government butchers in the Abattoir and inspected by Veterinary Surgeons assisted by a qualified Meat Inspector.

The following animals were slaughtered in Malta and Gozo Civil Abattoirs:—

(i) *Slaughtering from 1st January to 31st December,* 1963

	Cattle	Equines	Pigs	Sheep	Lambs	Goats	Kids
Malta	9,763	483	35,103	3,888	4,652	6,238	1,288
Gozo	877	5	3,511	206	683	193	255
Total	10,640	488	38,614	4,094	5,335	6,431	1,543

(ii) *Weight in rotoli of above number of animals slaughtered*

Malta	3,085,510	105,759	2,890,820	141,674	42,502	160,391	6,061
Gozo	310,998	11,95	320,636	5,368	7,382	3,597	1,727
Total	3,396,508	106,954	3,211,456	147,042	49,884	163,988	7,787

Diseases and other causes of unsoundness detected in the course of meat inspection

Table 10 shows returns of meat condemned in the course of meat inspection.

(iii) *Swine Fever*

37 pigs have been totally condemned owing to Swine Fever during the year, apart from others that had to be slaughtered before reaching the normal slaughtering age. This goes to show that unless pig breeders have their pigs vaccinated against Swine Fever they are bound, sooner or later, to suffer heavy losses through this disease.

(iv) *Putrefaction*

Putrefaction is one of the commonest causes of unsoundness of meat. During the year under review 36 carcases have been condemned as being in a state of putrefaction. This is explained by the fact that animals slaughtered as emergency cases soon begin to decompose and putrefy especially during the hot summer months.

(v) *Modernising Civil Abattoir*

During the last six years about £45,000 have been spent in modernising the Civil Abattoir which had become antiquated and too small to cope with the ever increasing number of animals slaughtered. The addition of a number of machines and equipment has largely remedied the position.

b) *Activities in the Field*

Activities in the field consist in the Preventtion, Control and Eradication of animal diseases.

(i) *Prevention*

Usually we import about 10,000 head of store cattle annually, which are fattened for three to five months and are then slaughtered. This year, however, we only imported 8,632 bullocks. These store cattle supplemented by another some 2,000 local bovines represent the total consumption of fresh beef in the Islands. Importation, carried out throughout the whole year, constitutes a serious danger of introducing infectious or contagious diseases. As however there is no chance of doing away with such importation for fresh beef is preferred to frozen beef by the majority of the people, there is no option but to take the strictest precautions imaginable before any consignment of store cattle arrives in the Islands. In fact, unless the exporting country is totally free and has been free for several months from Foot and Mouth Disease no import licence is granted. These precautions may appear to be too drastic, but they are considered essential. In fact by adopting these measures the Islands have been kept free from Foot and Mouth Disease and other infectious and contagious diseases for the last 17 years. These precautions are also essential for various reasons, i.e.:—

a) The size of these Islands, only 120 square miles, does not permit of any strict isolation of any infected animal. In fact if Foot and Mouth Disease were to take any foothold in Malta, it would spread like wildfire;

b) Some of the cow-sheds and most of the pig sties are extremely difficult if not impossible to disinfect properly;

c) The control of any movement of animals would be also an extremely difficult task;

d) The Quarantine Station at Manoel Island has been demolished by enemy action and has never been re-instated. Only one shed capable of housing about two hundred bovines is left. The Quarantine Station if re-instated could be of some help in case of an emergency.

Besides this strict control exercised before granting an import licence, all cattle are examined immediately on arrival. They are then kept under observation for another three or five days and again examined before they are released.

Horses are likewise examined for Glanders and Farcy on arrival and dogs imported from countries where Rabies is known to exist are kept in Quarantine for six months in Government Quarantine Kennels. The same period of quarantine is imposed on dogs coming from Rabies-free countries ifthey happen. during their journey, to have travelled through countries where Rabies exists.

During the year under review the number of dogs that had to be kept in quarantine exceeded the number of kennels available and this has been a constant headache. There were also occasions when dogs had to be released after 4½ months quarantine to make room for new arrivals.

(ii) *Control*

The most prevalent existing animal diseases are:—

Bovines	:—	Tuberculosis, Brucellosis and Mastitis;
Swine	:—	Swine Fever and Swine Erysipelas;
Caprines	:—	Brucellosis;
Poultry	:—	Fowl Pest, Fowl Pox and Respiratory Diseases.

a) *Bovines*

The control of Tubercolosis and Brucellosis will be explained under the heading "Eradication".

As regards Mastitis it is known that it is widespread and on the increase and that there are several types of Mastitis but as farmers have got into the habit of buying, without any prescription, intramammary penicillin and injecting it into diseased udders, irrespective of the type of bacteria causing the disease, control of this disease has been lost. A lot of money is being wasted in this way, as farmers as a rule inject more penicillin than is necessary and they do not bother to see what is the cause of Mastitis.

b) *Swine*

(i) *Swine Fever*

Swine Fever has become endemic and year after year has been playing havoc with the swine population. If it were not for this disease, the number of pigs reared in these Islands would be doubled and the pig breeders and rearers would not lose so much money. At present the only measures taken to check this disease consist in the vaccination of pigs to those breeders who ask for such vaccination. During the current year 9193 pigs have been vaccinated against Swine Fever which amounts to less than 24% of the number of pigs slaughtered. It is rather unfortunate that only a few pig breeders avail themselves of this opportunity.

This year 38614 pigs were slaughtered at the Civil Abattoirs and this total number of pigs slaughtered in one single year is the highest since 1945 when 42,900 were slaughtered.

ii) *Swine Erysipelas*

This disease is also endemic but its ill effects on the pig population are mitigated by the fact that nowadays it is easily cured and on the occurence of a case of swine erysipelas the herds are vaccinated and cured. Free vaccination of pigs against Swine Erysipelas is also carried out by Government on a voluntary basis and 4124 pigs were prophylactically vaccinated against Swine Erysipelas this year. The number of pigs vaccinated against Swine Erysipelas this year is only half the number of pigs vaccinated last year against this disease.

c) *Caprines*

The principal disease affecting goats is Brucellosis (Melitensis). About 20% of our goat population are affected with this disease and the losses through abortion and reduced milk yield must be quite relevant. However our farmers do not seem to appreciate the extent of these losses for they occur gradually and only a few goats abort every year. For the last 5 years research work has been carried out, and is still being carried out, with a view to finding a suitable vaccine which will immunise goats against Brucellosis. Such research work is being carried out by Dr. G. G. Alton and it is hoped that by 1964 the necessary legislation will be enacted to enable the Department to vaccinate kids in Gozo with the Elberg vaccine.

d) *Poultry*

i) *General*

The last twelve months have seen a continued expansion in the poultry industry and it may be said that the great majority of local eggs found on the market originate from intensive poultry farms. Most of these farms so far have concentrated purely on egg-production. Broiler rearing has not in the past proved attractive, partly on account of competition from foreign imports and partly because egg production has so far offered better returns to those interested in the business.

ii) *Poultry Diseases*

The disease situation shows a marked improvement on previous years, mainly because it now appears certain that Newcastle Disease has been eradicated from the Island.

Fowl Pox continues to be very widespread, but could be substantially reduced by a more intensive vaccination policy. Fortunately, the disease as it exists here, is very mild and its effects are noticed mainly by a drop in egg production.

Lymphomatosis, as in other countries, constitutes a continuous drain on the industry and probably accounts for more losses than any other disease. Actual outbreaks are nearly always associated with some form of overcrowding.

Parasitic diseases caused by coccidia and intestinal worms are common, particularly amongst the more poorly managed flocks. Control measures are obvious though sometimes difficult to apply with success.

Fowl Typhoid is now mainly a disease of small village flocks and does not cause serious losses.

Respiratory diseases such as Sinusitis and Coryza occur fairly frequently. They are not usually associated with serious mortality, but do cause an appreciable drop in production. In the majority of cases these respiratory diseases are seen under conditions of overcrowding, poor ventilation, or bad housing and their control is mainly a matter of improving the management.

Dietetic diseases are not uncommon, particularly Vitamin A deficiency. The problem here lies in adequate official control over the maunfacture of compound fodders. Manufacturers are apt to vary the quality and palatability of their rations, and this in itself will often cause a dramatic reduction in food consumption and in egg production.

A Diagnostic and Advisory service was established during June, 1963, covering the diseases of poultry, pigs and rabbits. This service is run by Dr. R. W. Crowther, B.Sc., M.R.C.V.S. who has been sent for this purpose by the Food and Agriculture Organisation of the United Nations that supplied also most of the equipment. The following summary is given of the diseases encountered.

Fowl Pox	6
Lymphomatosis	13
Sinusitis	3
Coryza	2
Fowl Typhoid	3
Coccidiosis	6
Ascarids	9
Vitamin A Deficiency	6
Vitamin B Deficiency	1
Vitamin K Deficiency	1
Prolapses & Cannibalism	6
Miscellaneous	14

It is felt that the laboratory is definitely needed here and provides a valuable contribution in collaboration with the existing Agricultural Advisory Extension Services. However, it is becoming clear that it would operate to more benefit to the community if its scope were widened to include the disease problems of cattle, sheep and goats. With the elimination of Newcastle Disease wihch was one of the major problems, there has not been a sufficient volume of work to take full advantage of this service. Representations have been made to F.A.O. regarding the extension of the terms of Dr. Crowther's assignment here.

Most of the larger producers purchase their own supplies of Newcastle and Fowl Pox vaccines from importing firms. These imports are free of duty and are not subject to any form of departmental control, and it is therefore impossible to form any accurate estimate either of the number of doses used, or of the proportion of the Island's poultry population which is being immunised. Legislation controlling these imports is becoming highly desirable. So far, it has been a Government policy to supply vaccines to the smaller poultry units free of charge. During the year 81927 birds were vaccinated against Newcastle Disease and 65831 birds were vaccinated against Fowl Pox.

iii) *Economic*

Generally it can be said that the Poultry Industry is in a healthy state and is expanding rapidly to meet local requirements. In this connection it is most advisable that a constant check should be kept on market prices and imports of foreign eggs. At present about 15 million table eggs are being imported annually. It is possible and highly desirable that Malta should be self supporting in eggs, but to achieve this it is necessary to ensure that local production is not hampered or slowed down by an overloaded market. Consideration of reducing or even of stopping altogether the imports of poultry carcases may also have to be given in the not very distant future. The benefits to be gained from this are as follows:—

(i) A re-introduction of Newcastle Disease would be a most serious blow to the developing poultry industry. It is known that the virus survives for long periods in frozen poultry carcases, and it was most probably through this medium that the disease was introduced here in the past;

(ii) Local poultry keepers are already facing stiff competition in finding a market for their hens when these are no longer suitable for egg production. Restrictions on the imports of broiler carcases would benefit this industry and assist it to expand.

(iii) At present very few birds are reared specifically for meat and this is very largely due to broiler imports. Statistics show a steady upward trend in these from 141,347 Kg. in 1958 to 323,183 Kg. in 1962. The restriction or prohibition of these imports might provide the stimulus necessary to establish the production of table poultry as a local industry.

iv) *Eradication*

The enactment of the Prevention of Disease Ordinance (Chap. 59) on the 25th May, 1961, made possible the smooth movement towards the eradication of Tuberculosis and Brucellosis. Whereas previously several herdsmen refused to have their cows tested, they offered very little or no opposition at all to the Disease Eradication Scheme after the enactment of the law. Thus in Gozo all the herdsmen that suppy milk to the Milk Marketing Undertaking had their bovines — about 2200 in all — tested and all reactors to Tuberculosis and Brucellosis slaughtered and compensated for. Thus to all intents and purposes Gozo may be declared a free area as all the tested bovines are negative to both Tuberculosis and Brucellosis. There are however a few herdsmen who keep an odd cow or two, who do not supply their milk to the Milk Marketing Undertaking and who have failed to register their cows for testing. Unless the remaining few cows are tested there will always remain the danger of these diseases being re-introduced into clean herds and spread the infection if they happen to be reactors.

In Malta all the herds that supply milk to the Milk Marketing Undertaking — 233 herds containing 3844 bovines — have been tested for both Tuberculosis and Brucellosis on various occasions and all positive reactors (with the exception of 2 herds containing 29 bovines which are all positive to the Tuberculin test) slaughtered and compensated for. There are also a few cases that are doubtful reactors to either the Tuberculin or the Agglutination test. The number of positive or doubtful cases to either the Tuberculin or the Agglutination test constitutes about 1% of the bovine population. It is hoped that these few still unslaughtered cows would also be dealt with in the immediate future.

The epidemic of Foot and Mouth Disease amongst pigs in Holland from where pregnant pedigree heifers are normally imported to replace slaughtered positive reactors, has prevented the usual importation of heifers and this fact has caused some hardship to the owners of positive reactors which had to be slaughtered as soon as detected.

Since no heifers could be imported from Holland all the reactors that were slaughtered could only be replaced by cows found locally. The price of local cows went up to £180 and at times even to £200. As the compensation paid by Government was £140 i.e. the contracted price, the herdsmen had to make up for the difference themselves. This state of affairs made herdsmen very reluctant to have their cows tested and those farmers who usually keep a cow or two and who do not supply milk to the Milk Marketing Undertaking did not register their cows and these were consequently left untested.

ARTIFICIAL INSEMINATION

In 1960 Artificial Insemination in cows was started on a voluntary basis. Knowing how conservative and sceptical farmers are, the Department did not expect spectacular results. However during 1960, 120 cows were artificially inseminated. The majority of these were cows that failed to conceive by natural mating. In 1961 and 1962 the number of cows artificially inseminated was 231 and 214 respectively. After the first three years of trial one would have expected the number of cows artificially inseminated to be increased, however this was not the case. In fact in 1963, only 139 cows were artificially inseminated. This poor response on the part of farmers can be explained by the following facts:—

a) Practically every farmer who keeps a large number of cows usually keeps a bull of his own to serve his cows;

b) The Artificial Insemination Service does not function on Saturday afternoons, Sundays, Holidays and on the afternoons during the summer months;

c) Most of our farmers do not appreciate the beneficial influence that can be transmitted by a good bull to its progeny.

Under these conditions Artificial Insemination cannot make but slow progress.

VII. THE DIAGNOSTIC LABORATORY

The present assignment commenced on 12th April, 1963 with the object of controlling contagious diseases in poultry and pigs.

Apparatus for setting up a diagnostic and vaccine producing laboratory was purchased by the Food and Agricultural Organisation with funds provided by the Freedom from Hunger Campaign, and a small laboratory unit was set up within the Brucella Laboratory on the Government Farm, Ghammieri.

The bulk of the work during the year was connected with the poultry section of the project. Poultry losses have been caused principally by Fowl Pox, Leucosis, Coccidiosis and Vitamin A Deficiency. Conditions of gross overcrowding and poor ventilation have been very common and have contributed materially to the general disease situation. At present it appears that Newcastle Disease is no longer present in Malta. So far also, no case of Infectious Bronchitis has been confirmed in the Laboratory and no outbreaks typical of the disease have been observed outside. Sinusitis and Coryza however are fairly common.

Fowl Pox and Pigeon Pox vaccines have been prepared locally and their distribution may commence in 1964. It is probable that vaccines against Newcastle Disease will also be made locally, though in view of the disease situation the need for this is not pressing.

The pig industry continues to be mainly in the hands of small village farmers and conditions of hygiene, feeding and management leave a lot to be desired. Progress in this line must inevitably be slow. The annual slaughterings vary between 30-40 thousand, the bulk of which is used for fresh pork.

The principal contagious diseases of pigs are Swine Fever, Swine Erysipelas and what is probably Virus Pneumonia. Of these, Swine Fever is the principal problem and is very prevalent, although fortunately of a very mild and chronic nature. The majority of infected pigs thus find their way to the Civil Abattoir, and butchers and dealers travel freely from this centre to the individual farms when buying pigs. Under these conditions Crystal Violet vaccine has not proved of much value and it was therefore decided to make a limited field trial using a live vaccine. Preliminary results from this have been sufficiently encouraging to justify consideratain of a compulsory mass vaccination programme in the future. Once Swine Fever has been brought under reasonable control it should be possible to see the other disease conditions in a better perspective.

As far as the present assignment is concerned, it became evident by the end of the year that the original terms of reference covering diseases of pigs and poultry were not going to provide sufficient work to justify its continuation. At the same time it was very desirable to maintain a specialised service in Mala in order to cope with any sudden emergencies such as a flare up or fresh introduction of Newcastle Disease. With the concurrence of the Food and Agriculture Organisation it was agreed that the scope of the laboratory should be widened to include investigational work on all classes of farm livestock. and a start will be made in that direction during 1964.

VIII RESEARCH IN ANIMAL BRUCELLOSIS

1. *Brucellosis in Cattle*

a) *Brucella Melitensis Infection in Dairy Cattle*

During the year we completed an experiment begun in 1962 to test the ability of *B. Melitensis* to spread amongst cattle in the absence of goats. In the experiment 4 infected cattle, all excreting *B. melitensis* in the milk, were housed along with 4 pregnant non-infected cattle from a clean herd.

The results may be summarized as follows. Excretion of *B. melitensis* in the milk of one cow ceased immediately and one other continued to excrete *B. melitensis* copiously throughout the experiment (10 months). The remaining two excreted regularly for two months, then intermittently for a further two months, then ceased. It may be concluded that the public health hazard resulting from *B. melitensis* infection in cattle is high.

There was no evidence of spread of infection to the clean animals, though one of them aborted, this was not an abortion due to brucellosis: the other three carried their calves to full term.

It was unfortunate that only one of the infected cattle turned out to be pregnant. This animal had a normal parturition without any excretion of brucella organisms being detectable. We may conclude that the ability of *B.melitensis* to spread amongst cattle is not very high, but we still do not know whether a cow aborting from *B.melitensis* infection can transmit the disease to other cattle. We know from field experience, that abortion due the *B.melitensis* infection can occur in cattle.

b) *Eradication of Brucellosis from Dairy Cattle.*

The laboratory has continued to carry out the diagnostic tests required in connection with this scheme. Recently it has been the policy to allow cattle known to be infected with *B.melitensis* to remain in the herds. In the light of the above investigations this policy may need reviewing.

At the last series of quarterly bulk milk ring tests, 23 herds gave a positive reaction. On follow-up blood tests, 4 of these herds showed no reactors and 4 more herds known to be infected with *B.abortus* showed a small number of reactors and these have since been slaughtered.

2. *Brucellosis in Goats*

a) *The experiment at Wied Incita*

The experiment at Wied Incita designed to test the length of immunity produced in goats by the Rev. 1 vaccine, was continued. Some losses occured during the year and 10 goats died from enterotoxaemia (Clostridum welshii type D). This disease has not previously been recorded in Malta and in future it should be preventable by vaccination. At the end of the year we were left with 58 vaccinated and 47 non-vaccinated goats. 28 female kids were reared during the year and some of these could be used to make up the numbers of non-vaccinated,

It had been intended to bring half the vaccinated and half the non-vaccinated goats to Ghammieri in December and expose them to brucella infection to test their immunity i.e. 1½ years after vaccination. In view of the fact that Rev. 1 has been shown to protect sheep for this length of time, and because thenumber of goats was dwindling, we have decided to postpone the test of immunity until the winter of 1964-65 when we should be sure of still having enough animals to give a significant result at this, the more important, interval after vaccination. It may also be possible that at this time we shall have enough animals left over to keep for a second challenge the following year, i.e. 3½ years after vaccination.

b) *Evaluation of Diagnostic Tests for Caprine Brucellosis*

Examination of diagnostic material, blood and milk, taken from goats slaughtered at the local abattoir was used for the evaluation of various diagnostic tests, by comparing the results given by these tests with the results of culture of lymph nodes and spleen taken from the same goats. This was a continuation of work carried out in previous years and, in general, supported previous findings.

c) *Vaccines against Caprine Brucellosis*

Investigations aimed at developing a brucella vaccine that produces neither a serological reaction nor abortion in vaccinated goats has continued throughout the year.

d) *Production of Rev.* 1 (*Elberg*) *Vaccine*

Eleven batches of vaccine were produced during the year. Despite the fact that the same batch of dried Rev. 1 culture was used for producing seed material as in previous years, during 1963 a good deal of dissociation was encountered in the final product. This had not happened in previous years. Four of the 11 batches were discarded because they contained more than 5% of rough dissociants. In one batch the number of "roughs" reached 25%.

This is a problem that will have to be solved before the vaccination "season" of 1964. We hope to have sufficient dried vaccine of good quality ready before field vaccination is due to commence for 1964.

e) *Field Vaccination*

A total of 1,716 goats were vaccinated in the field with Rev. 1 vaccine during 1963.

3. *Future Plans*

In 1964 we plan to continue the work still in progress at the end of 1963, but hope to be able to intensify field work aimed at controlling brucellosis in goats.

A plan for the setting up of a register of brucellosis-free goat herds in Malta has been drawn up. This plan is based on vaccination combined with testing and the elimination of positive animals.

IX. HORTICULTURE DIVISION

Horticulture is being given an ever greater role in the departmental structure. It is appreciated that since experienced labour is available in abundance greater cash crops should be grown both for the home market and for export. Particularly out of season crops and flowers should be cultivated.

a) *Cambridge Glasshouse*: The whole house was planted with tomatoes; however, both halves could not be planted at the same time since the seeds took a long time to arrive from England. The southern part of this house was devoted to a statistically randomised and replicated tomato grafting experiment — comparison of grafted Eurocross A plants (on rootstock KN) with ungrafted Euro A, B and BB. The purpose of this experiment was to find out any difference in growth

and yield and resistance to disease between grafted plants. During the previous year there were outbreaks of Didymella and also some plots were found to be infected with rootknot eelworm. Therefore, as usual, before the beginning of this season, the soil was steam sterilized using a boiler provided for the purpose for the first time. In this particular glasshouse, all precautions are being taken to prevent soil contamination from outside. Up to date, no outbreaks of soil or seed borne diseases have been noticed and therefore the contention that grafted plants are more resistant to certain pests and diseases (e.g. Rootknot eelworm and Didymella) could not be tested. It must be kept in mind that Didymella (once it gets into a house) is supposed to be more rampant on sterilized soil.

It should be pointed out that this was the first time that grafting of tomato plants was carried out in Malta.

The North half of this house was planted with half a dozen leaf mould resistant varieties together with another 8 varieties which were thought to be promising during the previous season. Leaf mould, of course, is one of the most stubborn disease under glass; up to now it can be stated that the 6 LMR varieties have certainly been resistant to this disease but fruit quality is not so outstanding.

Up till the end of January, fogging was carried out by the Plant Protection Section; however this had to be stopped owing to the extensive scorching which it was causing on the leaves of the plants.

Two other new practices, besides tomato grafting, which were introduced this year were the use of electric bees (to ensure pollination and setting of the flowers) and the use of tri-sodium orthophosphate solution to control spread of virus infection.

b) *Guernsey Glasshouse*: The heating system in this house was disconnected so that the same conditions under which local farmers grow their crop would prevail. This house was planted with the tomato variety Moneymaker but a trial of five different Bean varieties was also carried out.

The tomatoes were subjected to various spraying programmes for disease control. It can be stated that the sprayed plants remained relatively healthy whereas those in the control plots were affected by blight, leaf mould and Septoaia. However spraying this year caused extensive leaf scorching and affected adversely the flower setting.

The soil in this house was never sterilized; on digging out some plants, it was no wonder therefore to find that they were affected by rootknot eelworm. Another disadvantage met with was the lack of a draining system in this house.

The climbing Beans yielded favourably, the produce was marked locally and fetched good prices. Unfortunately some of the plants were killed by Sclerotinia against which there is no known cure. This was probably soil borne and it is hoped that better success would be had next year when the soil would be sterilized for the first time in this house.

c) *Polythene Cucumber House*: This house was devoted to varietal trials of Cucumbers, demonstration of traditional cue bed, trial of various melon varieties and to two varieties of Eggplants. This polythene house is heated by a single pipe running along the base of the wall on the West side. In order to counteract the cold conditions on the Eastern side of the house and at the same time to try out under local conditions an established English practice, a Traditional Bed was laid out along 2/3 of this side. This consisted of different layers of soil and composted farm yard manure which is supposed to benefit the plants by its continuous release of heat through slow fermentation. In practice, however, it was not so successful and it was obvious that the plants on the heated west side of the house were faring better. A major factor of course was the prevailing temperature, that near the pipe being round about 76° F while that in the Traditional Bed was about 55° F. Up to now the plants have yielded very favourably but total yields are not yet available.

English, Greek, Israeli and French varieties of melons are being tried out; seeds of the latter variety arrived late and its earliness could not therefore be compared with the others. Regarding the other three varieties the English 'Dutch Net' seems to be strong grower; the fruits should be ready for marketing within a week.

Eleven plants of each of two varieties of Egg plants (Local and Israeli Black Beauty) were planted along the middle of the Cucumber house. These have now come into bearing and the produce which was marketed fetched £1 per wiżna. This is the first time in Malta that Eggplants were on the market at this time of the year.

d) *Polythene Lean-to*: Two varieties of Bell-peppers (Local and aIckson Wonder) were planted in this house — half having been propagated in soil blocks and half in 3½" pots. They are still cropping very satisfactorily. Total yields are not available yet.

e) *Mushrooms*: This crop is being grown in wooden trays constructed out of the boiler box; these trays have now been cropping for at least 4 months but since the area involved is too small single pickings are not big enough for marketing. Trials are being conducted using cow and horse manure, different types of spawn and casing layers.

This is the first time that this crop has been grown at the Government Farm.

f) *Strawberries*: Half a dozen varieties were obtained from England and these are being tried out at the Government Farm. Some have been allowed to crop while the rest have been deblossomed — It is being observed whether the latter procedure has any effect on the establishment of the plants and their subsequent yield.

g) *Oil Geranium*: Scented Pelargorium stock plants were obtained from Superindendent Public Gardens and cuttings taken from them and rooted. The aim is to have enough plants to make possible a constant supply to the Agricultural Chemist of samples of leaves for oil distillation with a view to eventual commercial production.

h) *Outdoor Tomato Varieties*: This experiment is just being held out and is a fully randomised and replicated trial investigating the potential yield and quality of 'Pelati' varieties.

i) *Advisory Work*: Advice and practical assistance were given to growers on innumerable occasion on various aspects of horticulture including outdoor and protected crops.

X. PUBLIC GARDENS, PLANTATIONS AND AFFORESTATIONS SECTION

a) *San Anton Public Gardens*

These gardens are the finest to be found in Malta and are frequented by thousands of visitors, including tourist, the year round. Indeed they are so nice that fairs are held in them as often as the law permits. By themselves they are sufficient attraction to many.

These are especially enchanting in spring when flowers are in full bloom. This year, Erythrina corallodendron, Benhemia purpurea, Jacaranda mimossefolia, Machacrium tipa and several species of Acacia were exceptionally fine. Bougainvillea laterntia and Bougainvillea sanderiana in their brick red, rosy and purple colours proved a great show. Cinerarias, Stocks, Antirrhinum, Exlscholtzia, Petunia and other annual and perennial flowering plants played a gorgeous part for months. But it was a large collection of Calceolaria that attracted the greatest attention.

The Garden Aviary, which is the rendezvous spot for bird lovers, was extended this year and this helped it to gain greater prominence.

b) *Buskett Gardens*

The public patronizes these gardens because of their historical connections with the sovereign Order of St. John of Jerusalem. The Agrarian Society, which is subsidized by Government, holds its annual show in the grounds of these gardens on the Feast of St. Peter and St. Paul. The public from all over the Island and even from the sister Island of Gozo throng literally in thousands to watch the beautiful and varied exhibits of animals and crops on this occasion.

It is a great pity that a number of springs have had to be deviated from watering these gardens because of the great need of potable water. Some of the trees are showing increasing signs of withering and general deterioration. Fortunately however this state of affairs is being remedied by means of the construction of water tanks. Bowsers are also being used to bring water from disued quarries that are to be found in the neighbourhood in order to make up for this deficiency in water supply.

The collapsed terraces which had to remain in a derelict state are now being reconstructed and the gardens have therefore assumed a better look throughout.

c) *Other Public Gardens, Open Spaces, Traffic Islands and strips*

The area of open spaces, traffic islands and strips is increasing fast and the job of keeping these spaces decorated with flowers is becoming an ever more arduous task. Still, many a roundabout contained particularly dainty floral designs which were commended by the appreciative public.

It is to be regretted, however, that some children are not sufficiently educated, and floral designs which sometimes take days to set up are destroyed by them in a matter of a few hours. Appeals to parents to educate their children in this regard are quite often made on the Rediffusion.

The Superintendent of Public Gardens, as in former years, spent a good part of his time advising on arboricultural and floricultural activities to both the professional florist and the amateur gardeners.

d) *Nurseries*

The Nurseries are the principal source of supply of trees, shrubs and plants in pots. The public requirements in trees have to be met from them. In addition, a relevant percentage of the private demand for plants is supplied from these nurseries. However, these are sufficiently large and can adequately meet all demands made on them.

It is necessary at times, however, to supplement them by trees and plants imported from Sicily. The Superintendent of Public Gardens goes himself to Sicily and selects thousands of trees which are subsequently acclimatised in these nurseries and are eventually issued in accordance with requirements.

e) *Plantations*

The number of trees in public roads continues to increase. Many a street has now been turned into an avenue with the ficus tree on each side. This kind of tree seems to enjoy fully the alkaline soil met with in the substrata and grows quite profusely affording shade to all passers by and giving the avenue a most pleasing effect with its dark green foliage that fans out in all directions. One of the drawbacks however, is vandalism which despite all propaganda measures for a love for trees continues to exist in a much milder form. Motor accidents, also take their toll of the trees.

f) *The private gardens of San Anton and Verdala Palaces*

These are His Excellency's private gardens. They were kept as nice as possible and all the year round floral designs graced these parks. Several sites were planted with Bermuda grass (Cynodon dectylon) which thrives very well during the

summer months. It is true that during the cold months it loses its delicate green colour but on the whole it has given better results than any other grass hitherto tried.

g) *Afforestations*

Afforestation work was proceeded with throughout the year.

Mr. H.G. Keith, an F.A.O. forestry advisor, paid another call at the request of the Malta Government. He is satisfied with the progress made since 1956 in which year he had recommended the scheme.

There is no doubt that the trees planted would have made better progress had they been watered oftener. But water shortage is one of the Island's toughest problems.

Mr. Keith suggested that all planted trees should be given 500 grammes of 12-24-12 (K.P.N.) at the beginning of the rainy season and another application of 300 grammes of Sulphate of ammonia during February or March. These applications are considered to be very beneficial and good results are expected from their application.

The following table gives the kinds of the trees planted and the localities where they have been set up:—

Locality	Olea	Ceratonia	Oleander	Juniperus	Pinus	Ailanthus	Other
Malta							
Miziep	17,184	100	—	—	—	—	—
Ballut	2,499	—	—	—	—	—	—
Ta' Mrejnu ...	2,071	—	—	—	—	—	100
Zabbar	1,415	—	58	—	259	—	—
Marfa	3,000	—	70	12	—	72	—
Armier	2,706	560	—	—	—	—	—
Total	28,975	660	128	12	259	72	100
Gozo							
Ch'Sielem... ...	387	—	—	—	—	—	—
Cambray	716	—	—	—	—	—	—
M'Forn	4	8	—	—	—	—	—
Munxar	24	—	—	—	—	—	—
Nadur	54	—	—	—	—	—	—
San Raflu ...	92	—	—	—	—	—	—
Ta' Blankas ...	836	—	—	—	—	—	—
Sannat	270	—	—	—	—	—	—
Comino	—	—	—	—	—	—	70
Total	2,393	8	—	—	—	—	70
Grand Total ...	31,368	668	128	12	259	72	170

h) *Emergency Scheme*

In former years considerable quantities of trees were lost following violent storms because of the lack of an organisation to deal promptly and efficiently with fallen trees. On instructions from the Hon. Minister of Agriculture, Power and Communications a scheme has been devised and is now in operation.

The Island has been divided into eight districts. In each district there is a leading man in charge. He has a gang of 5 labourers to work under him and a van is placed at their disposal. This simple organisation has been instrumental in reducing the loss of trees caused by gales to an insignificant number.

XI. THE MARKETING SECTION

General

The activities of this section comprise the following:—

1. The collection of statistical data regarding items of agricultural interest.
2. Supervision of the wholesale Pitkali Markets and the Co-operative Stalls.
3. Inspection of agricultural produce at the Export and Import Inspection Sheds.
4. Making recommendations to the Director of Industrial Development with a view to the issuing of licences for the import and export of agricultural produce.
5. Issuing permits in connection with the distribution of locally-milled wheat offals and pulverized manure.
6. Watching over the controlled retail prices of fresh fruit, vegetables and meat.

1. Vegetables, Fruit and Cereals

i) *Vegetables*

a) *Potatoes*

Potatoes are extensively grown in Malta both to meet the local market demand and for export chiefly to the London and Liverpool markets. Large quantities of potatoes are also sent to Rotterdam. Every year no fewer than 4,000 tons of seed potatoes are imported, mainly from Ireland. In 1963, 4,480 tons of seed potatoes were imported. The Arran Banner is preferred. Next in preference is the Alpha. The other varieties are not important. The potato seeds are imported during November and December of each year.

The export season commences early in April and drags on up to end July. The total quantity annually exported varies round about 10,000 tons. In 1963, 11,174 tons were exported to the United Kingdom and to Holland.

The ware potatoes are generally exported in jute bags but following the advice given by sellers in the United Kingdom an attempt was made last year, to pack them in peat moss in 25 kilos wooden boxes. This year about 70 tons were exported. There is every likelihood that in each successive year a greater quantity of ware potatoes, thus packed, would be exported.

b) *Onions*

Onions are exported in fairly large quantities and during the year over 2,000 tons of onions were exported mainly to the United Kingdom and Holland.

The seed is almost wholly grown locally. Two main varieties are grown, one to meet the requirements of the local market and the other for export. The local market shows a preference for the round pink type and the foreign market has a taste for the round yellow flat top type.

The latter variety is grown on relatively dry land, met with in the eastern and south eastern districts of the Island.

c) *Tomatoes*

Tomatoes have become a product of considerable importance and the export stage has been reached and henceforth efforts will be made to improve upon the results so far achieved.

The policy in regard to tomato growing was a multi-stage one. It was considered that the first objective should be that of meeting the local table requirements. Next, production was increased with a view to meeting the needs of the canning industry. These two phases having been successfully accomplished, consideration was given to render imports unneccessary. This too was attained. The next target was to export raw tomatoes in small quantities. Even this was achieved. This year, therefore, efforts were concentrated on exporting tomato puree. A start has been made in this line and about 120 tons of tomato puree were exported to the United Kingdom. In future consolidation of these successful steps will be aimed at.

d) *Other Vegetables*

No other vegetables are exported, but all local requirements are adequately met exclusively from local supplies.

The principal vegetables grown are:— Artichokes both Globe and Jerusalem, Broad Beans, Cabbages, Carrots, Cauliflowers, Cucumbers, Kohlrabi, Lettuce, Marrows both long and vegetable, peas and pumpkins.

Fruits typical of the Mediterranean basin are grown. The most important are:— Apples, Cherry plum, Figs, Melons, (water) Melons (winter), Melons (sugar), Oranges, Lemons, Peaches and Strawberries. But the demand for fruit is so great that large quantities are imported from Italy and Tripoli.

iii) *Cereals*

Wheat, Barley, Meslin, Vetches, Forages, Broad Beans and Locust beans are all grown in sizeable quantities but imports are the chief source of supply.

2. Marketing Centres

Agricultural products are almost exclusively marketed through the pitkali (salesmen) and the Co-operative Societies.

The number of pitkali is 34 in Malta and 4 in Gozo. They run their business in the places indicated below:—

MALTA

7	established at	Birkirkara
5	„	„ Marsa
2	„	„ Mosta
6	„	„ Rabat
3	„	„ Żebbuġ
11	„	, Marina Valletta

GOZO

4	established at	Victoria

With the exception of the Pitkali at Valletta, Malta and at Victoria, Gozo, salesmen carry out their transactions under the supervision of a departmental official appointed for the purpose.

Co-operative Societies have their stalls at the localities given below:—

MALTA

1	established	at	Birkirkara
1	,,	,,	Marsa
1	,,	,,	Rabat
1	,,	,,	Żebbuġ
1	,,	,,	Siġġiewi
1	,,	,,	Valletta

It is estimated that 23% of the total sales of agricultural products are handled by the Co-operative societies, the pitkali dealing with the balance.

3. *Trade in Agricultural products*

(a) *Exports* 1963

i) Potatoes are the chief items exported. The quantity exported in 1963 was 11, 173 tons valued at £486,724.

ii) Wine has become the second largest item of export. Its value reached £241,256.

iii) Flowers are now the third largest item of agricultural exports. The value of the flowers exported was £90,000. There is every likelihood that expansion in this line would continue.

iv) Onions are next in importance. Their export value was £52,000.

v) Tomatoes were also exported but in extrmely small quantities. Tomato puree was also exported for the first time. It is envisaged that exports of tomatoes and tomato products would significantly increase in the near future.

(b) Imports are heavy and cause a great drain in the balance of payments structure. But these are not as great as they would have been had not far-reaching methods been taken to cut them down as much as possible.

Indeed the Island is self sufficient in many agricultural items. No vegetables, including onions and tomatoes are imported. No wine in bulk and no fresh pork are imported either. The importation of eggs has been considerably reduced and there are high hopes that withn the next two or three years all importation will cease.

i) Fruits are however imported in large quantities. No fewer than 5,700 tons valued at £555,100 were imported.

ii) Fodder is another item which is imported in considerable quatities. The value of imports was £517,000.

iii) Eggs in the shell are another article as yet heavily imported. Some 1,248,000 dozen valued at £167,400 had to be in fact imported.

iv) Seed potatoes are also imported in sizeable quantities. The value of the 4,580 tons imported is estimated at £98,700.

v) Fertilizers are another item which is imported in large quatities. The value of such imports exceeded £43,000.

4. *Licences*

All import and export licences regarding agricultural products are submitted to the Director of Industrial Development through this branch whose duty it is to recommend them or otherwise.

5. *Permits*

Every Friday morning the Secretary of the Malta Millers Association reports to this branch the position of the wheat offals stocks.

After taking into account a certain quantity meant to meet the needs of the sister Island of Gozo, the balance is distributed by means of permits on the licensed retailers to the registered breeders, manufacturers and co-operative societies, in accordance with their requirements as assessed by the Agricultural Officers consonant with the weekly available supply.

6. *Inspections*

Agricultural Inspectors regularly make inspections to retailers of fresh fruits, vegetables and meat for the purpose of ensuring that the provisions of the Agricultural Produce (Markets) Regulations are observed.

7. *Assignments abroad*

During 1963 the Agricultural Economist carried out the following assignments abroad:—

1. In January-February attended a Research Seminar on Fisheries Economics at Bergen.

2. In May took part in the F.A.O. Meeting of the Committee on Commodity Problems in Rome as the Malta Government adviser to the U.K. Delegation.

3. In May-June participated in the International Congress on Fruit and Vegetable Storage and Marketing held by the Italian National Academy of Agriculture at Bologna.

4. In October took part in the Economic Mission to Italy headed by the Under Secretary of the Ministry of Economic Planning and Finance.

5. In November attended the Technical Meetings and Plenary Session of the F.A.O. conference in Rome as an adviser to the Malta Government Delegation.

XII. PLANT PROTECTION SECTION

1. *General*

Progress continued to be made in every aspect of Pest Control. Experiments were mainly directed at confirming the previous year's pilot trials, and firm recommendations can now be given to farmers and growers on the majority of economic pests. So far, no resistance problem has been recorded, but field tests with alternative compounds are already under way, for the necessary materials to be in hand if the occasion warrants it.

Additions to the equipment and apparatus of the Laboratory have been made, notably in the acquisition of apparatus for Thin Layer Chromatography. This will be put to use early in 1964 for determination of Pesticide Residues in Fruit and Vegetables.

The Plant Pathologist and Entomologist, Mr. L.J. Saliba obtained a British Council Bursary to look up reference literature on Woodboring Beetle larvae (Cerambycidae) in apples and pears. Apart from this work, carried out in the Libraries of the Commonwealth Institute of Entomology, the Royal Entomological Society of London, the British Museum (Natural History) and the Science Museum, Mr. Saliba also visited the glasshouse crops Research Institute, Woodstock Agricultural Research Centre (Shell), Chesterford Park Research Station (Fisons), S.D.C. Persticides Ltd., and the Department of Technical Cooperation.

Field and spraying equipment was increased, and the Section now possesses practically the full range of equipment (except, of course, tractor-driven models). Emphasis was placed on the acquisition of small, inexpensive types, principally for demonstration purposes. With the introduction of the motorised sprayer, the feeling has grown among farmers and growers that the hand-operated models are no use. Extensive work is in progress to convince those concerned that a motorised sprayer is not necessarily the best economic proposition and that the choice of

a spraying equipment should depend both on the area concerned and the period of utilisation of the machine.

2. *Literature*

The List of Insect Pests of Crop Plants, submitted for publication in August 1962, was revised in January, and has now reached the 'proof' stage. It should be available to the Public early in 1964.

A booklet entitled 'Pest and Disease Control in Glasshouse tomatoes' is being circulated among glasshouse growers. A Maltese version of this has been prepared, and will be available to those farmers who do not read English, in January or February, 1964.

Recommenndations for the Control of Pests and Diseases under local conditions have been revised, and brought together in one booklet, which is being stencilled. This is primarily directed to Advisory Officers of the Department, Importers and Retailers of Agriculture Chemicals. Annual editions of the booklet will be published to keep the public informed of progress. The 1964 edition should be available towards the end of January.

A 'Scheme to Control Pesticides Usage in the Maltese Islands' was also stencilled and distributed to the Departments concerned.

Articles on Pest Control, and on Pesticides were also published in the Farmers' magazine "Il-Bidwi".

3. *Insect Pests*

The Tussock Moth, *Orgyia trigotephras* var *Corsica* Stgr. was reported in a few localities on Plums. Malathion sprays had mediocre results, diazinon slightly better. The larva was first encountered in June 1962, and increased its hold slightly, during 1963. The necessary steps to enable growers to notify the Department immediately, to prevent its further spread, are being taken.

Field scale trials with Diazinon, Chlorthion, Dimethoate and Sevin for Control of Codling Moth (Cydia pomonella) on apples and pears, have confirmed the previous years' pilot trials. The first three chemicals, applied twice at 3 to 4 week intervals, gave from 95 to 99% Control. Sevin gave the same results, but had to be applied 3 times at 10-15 day intervals.

The present control programme for Codling Moth, based on Malathion, requires 5 to 6 sprays at 8-12 day intervals. The new chemicals will therefore lower the cost of production considerably, especially in terms of labour. The tree organsphosphorous compounds will be recommended to farmers and growers for the 1965 season. (Further confirmatory tests, as well as residue analyses, are being held in the Spring of 1964). Sevin will be used on a small scale by Departmental personnel, and held in reserve, as an alternative chemical in case of resistance.

The last confirmatory tests on combination sprays for Control of Mediterranean Fruit Fly on Citrus were held between August and October, 1963. Altogether, over 3,000 trees were sprayed. Recommendations to farmers and growers have now been officially given as follows: —

1. Dieldrin 50% Wettable powder (0.2%)	—	3 to 4 sprays at 4 week intervals.
2. Fenthion 50% E.C. (0.2%)	—	3 to 4 sprays at 4 week intervals.
3. Fenthion 50% E.C. (0.2%) plus Dieldrin 50% W.P. (0.2%)	—	2 sprays at 6 week intervals.
4. Diazinon 40% W.P. (0.2%) plus D.D.T. 50% W.P. (0.1%)	—	2 sprays at 6 week intervals.

The first recommendation has been in use since 1958. The last three will also eliminate scale insect infestations. Any residue problem is minimised by the 6 to 7 week interval between application and harvest.

The Barbary Bug complex, which constituted a serious threat to peach and other blossoms, has finally been brought under control. During the 1962 season, trials with practically every organophosphate available produced no tangible results. In the same year, Dieldrin Wettable powder at 0.05% a.i., sprayed into the open blossoms, achieved nearly complete control on peach. The trial was repeated on a wider scale last season, with very good results, and recommendations have now been issued.

A preliminary spraying trial with D.D.T. and Malathion for control of Potato Tuber Moth, *Gnorimoschema operculella* Zell. has given good results. The potato haulms were sprayed during the latter part of May, roughly 3 weeks before harvest. It was not, however, possible, to effect a proper assessment of the results, and a full scale trial is being prepared for the coming season. At the same time, arrangements are being made to demonstrate the value of the proper hygiene during harvest and storage.

Dieldrin and Chlordane, both at 0.4% a.i. continued to give very good results on Cerambycid wood-borers in Apple and Pear. Full-scale research on the two pests — *Cerambyx dux* Fald. and *Creambyx miles* Bonelli, went on throughout 1963.

It is expected that this will be completed between August and October, 1964. *Cerambyx dux* is the more common of the two species, *C. miles* being comparatively rare.

The number of farmers and growers switching over to the new trunk-spray technique is steadily growing, and the Section had very little demand for information on methods of controlling mature larvae. The population of the latter is also being systematically decreased by the considerable number of larve being collected and brought to the Laboratory for investigational work.

Pre-planting treatments (Aldrin or BHC) for control of soil insects (mainly mole-crickets, cockchager grubs and cut-worms) are staedily on the increase. Farmers usually plant in severely-infested soil, and only come to the Section for advice after damage to the crop has already reached serious proportions. This year, several farmers turned up well in time, and reports of undamaged crops have been reaching the Section.

A spraying programme for control of the Grape Berry Moths — *Polychrosis botrana* Schiff, and *Polychrosis Viteana* Clemens has now been worked out, and recommendations have been issued to farmers. A four-spray programme, starting at petalfall, and ending in late August/early September, has been found to be the best. Of the various Chemicals tested, Diazinon, Dimethoate, and Malathion have given satisfactory results. The latter chemical is only being recommended for table grapes, at present, pending investigations on its effect on vinification.

The Olive weevil, *Otiorrhyochus cribricollis* has become a serious pest of Olives, especially those planted on waste land as part of the afforestation scheme. Aldrin and Dieldrin, applied to the soil and the lower part of the trunk are now giving far better control than the previous DDT cover spray. Telodrin is being tested against this pest during the 1964 season.

4. *Plant Disease*

Late Blight (*Phythophthoria infestans*) was evident on both Spring and Autumn crops, though outbreaks were kept well under control by spraying. Copper Oxychloride, Copper Oxycarbonate, Cuprous Oxide, Zineb and Maneb, both on their own and in various combinations were used. The same chemicals gave identical to similar results against the same disease in Outdoor Tomatoes.

Dodinen acetate continued to give excellent control of Scab (*Venturia pirina*) on Pears. Captan and Phaltan are still in general use, and whether Dodine Acetate will supplant them will depend mostly on the price-factor.

A full-scale field trial for control of Downy mildew of Onions (Peronospora Destructor) was held at the Government Farm during the late winter and spring. Maneb gave the best results, followed by Zineb. Phaltan gave mediocre control. A confirmatory test, using Maneb and Zineb is being held this season.

5. *Pests and Diseases of Tomatoes under cover.*

As in past years, there has been little difficulty in controlling Insect and other animal pests. D.D.T. and Malathion continued to give satisfatcory results against soliage feeders, while Aldrin, applied to the soil, gave similar control of Agrotids, cockchafer grubs, and mole-crickets. Disease control still presents a problem, in that it is not yet sufficiently recognised that application of chemicals cannot yield satisfactory results unless coupled with good management.

Metham-sodium (Vapam), applied to the soil as a dilute drench 4-6 weeks before planting, gave good results against soil-borne fungal pathogens, principally *Verticillium* and *Sclorotinia,* and against Root Knot Eelworm. Virus diseases, however, remained relatively rampant. Steaming still remains an uneconomic proposition for the majority of units (1,000 sq. ft.).

A full-scale trial for the control of late Blight (*phytophthora infestants*) and Leaf Mould (*Cladosporium fulvum*) was held during January/March. Captain and Phaltan (Folpet) gave satisfactory results against Leaf Mould, Zineb and Maneb mediocre control. Copper Oxychloride, both in Wettable Powder and liquid forms, gave poor control. All chemicals gave good control of Blight. Dodine caused an appreciable amount of damage to the crop.

The trial was conducted primarly to assess the effect of the various chemicals on the pathogens. With the exception of liquid copper, they all left a visible deposit on the fruit.

The full range of machinery available was again assessed by trials, this time from the coverage aspect. Brief conclusions reached are as follows:—

(a) High-volume sprayers — These have so far given the best results. The time and patience required to spray the under-surface of the foliage, however, is enormous, and only where the treatment was done by Departmental personnel was the coverage satisfactory. The addition of spreaders and stickers enhanced the coverage considerably, even when applying patent formulations incorporating their own ancillary chemicals.

(b) Airblast sprayers — While it is ideal for outdoor work, the conventional low-volume knap sack sprayer operates at a distinct disadvantage in the confined space of a glasshouse. As the crops have to be sprayed at close range, the bulk of the spray-particles rebound off the foliage. The exhaust fumes, from the back of the machine also cause a slight amount of scorch. During 1963, this was somewhat improved by opening the throttle as little as possible and adjusting the silencer so that the exhaust fumes are blown downwards. This arrangement has proved considerably better, but is still far from being entirely satisfactory, as a visible deposit is still left on the fruit and requires individual wiping before export.

(c) Aerosols, smokes and fogs — Trials over the last 2 years with fogging machines have so far yielded little results. In this connection, another severe handicap is the restricted range of chemicals available. So far, the only fungicides formulated as fogging concentrates are Copper Oxychloride and Zineb, both of which have at best given mediocre results against leaf-mould. The cover obtained was still unsatisfactory during the 1963 Spring Season, and letters to various institutions abroad hardly clarified matters. In the Autumn of 1963 1 part of 46% Zineb (formulated as Zineb-in-oil) to 5 parts of Shell process Oil 1211, applied as a fog, was initiated as a weekly treatment. Results so far are encouraging. TCNB smoke-pellets are to be tested against leaf mould during the coming season.

It is relevant to point out that while control has been fair to satisfactory in the better-managed glasshouses, results have been mediocre to dismal in other houses, even when the same treatment was applied. Most farmers have still to realise that (a) no chemical spray, however thorough, will provide good control of a disease in a glasshouse where conditions are consistently maintained at the optimum for proliferation and development of the pathogen, and (b) it is not only important, but essential for treatments to be applied before the usual onset of external symptoms, not when infestation is already rampant. This season, advisory visits to glasshouse growers are being carried out conjointly with the Horticultural Section, and results, in the shape of less severely-infested glasshouses are already becoming evident.

6. *Contract Spraying*

The following work was done during 1963:—

Potatoes (Blight)	800	tumoli
Tomatoes (Blight, Leaf Mould, Russet mite)	80	,,
Vines (Downy and Powdery Mildew)	240	,,
Ornamentals (Various)	55	,,
Miscellaneous Vegetables (Various)	100	,,
Citrus (Scales, Fruit Fly, Lichens)	21,250	trees
Peaches (Leaf Curl, Scales, Fruit Fly)	1,800	,,
Apples and Pears (Wood-borers Codling Moth, Scab) ...	10,400	,,
Olives (Weevils, Olive sucker)	58,000	,,
Miscellaneous trees (Various)	600	,,
Pruning and grafting	2,900	,,
	and vines	

In addition, several glasshouses were treated with Metham-sodium and formaldehyde and Road-verges treated with herbicides for weed-control.

Several items of equipment were purchased or ordered during the period under review. These include one trailer-tank, One 22-gallon High-volume sprayer, and several 'small' sprayers, including hand and foot-pedal operated models.

7. *Plant Quarantine*

Steps are being taken to prepare new legislation to replace the old 1876 Ordinance and the miscellany of Government notices and regulations issued under it. The new Law will take the form of a Covering Act and a system of Schedules. The draft Act has just been prepared, and will be submitted through the usual channels in due course.

A. *Imports*

Fruit:—	Apricots	1,294	parcels
	Apples	209,989	,,
	Bananas	44,039	,,
	Cherries	1,067	,,
	Grape Fruit	1,899	,,
	Lemons	8,205	,,
	Medlars	51	,,
	Oranges	212,191	,,
	Pears	56,186	,,
	Plums	931	,,
	Peaches	23,129	,,
	Tangerine	7,489	,,
		566,470	
Vegetables:—	Parsnips	130	parcels
	Swedes	240	,,
	Ware Potatoes	13,820	,,
	Seed Potatoes	91,593	,,
		105,783	

Miscellaneous:—	Live Plants	5,553	parcels
	Flower Bulbs	295	,,
	Cuttings	1,321	,,
Vegetable	Seeds	11	,,
	Beans	151	,,
	Pears	150	,,
		7,481	

B. *Exports*

Fruit:—	Oranges	31	parcels
Vegetables:—	Onions	85,840	,,
	Ware potatoes	446,931	,,
	Mushrooms	45	,,
	Artichokes	819	,,
	Tomatoes	76	,,
Miscellaneous:—			
	Cuttings (Flower)	364	,,
	Flower Seeds	35	,,
	Cuttings (other)	7,327	,,
	Live plants	32	,,
		540,490	

Steps have been taken to classify Import and Export consignments inspected by weight instead of by 'parcels'. This will operate as from 1964.

8. *Advisory duties*

Over 1,000 Farmers and growers were visited at their own premises by members of the Section and given advice on Plant Protection problems. The bulk of this number consisted of ordinary householders, rather than full-time farmers. To alleviate this annually-recurring drain on the Section's recourses, a booklet entitled "Pest and Diseases Control in the Home Garden" is being prepared, and will be placed on sale during early 1964.

Several lectures and talks to farmers in Malta and Gozo were given. The main theme this year has been "safety precautions in handling and applying Pesticides", and the importance of observing the recommended safety interval between application and harvest.

XIII. GOVERNMENT FARMS AND STOCK STATIONS DIVISION

Introduction

During the year the primary aims of the Government Farm comprised the following:—

i. To afford facilities to the Technical Officers of the Department to carry out research and investigational work in animal and crop husbandry and in floriculture.
ii. To serve as a demonstrational farm to local farmers, breeders and floriculturists.
iii. To produce high grade animals for breeding purposes and to be a source of supply for the planting of certain crops.
iv. To introduce modern farming techniques and to encourage a greater use of agricultural machinery.

On the whole these aims were attained. Farmers, breeders and florists have made frequent visits and had discussions with the technical officers on such topics as were of interest to them. The keeping of records as to their animals' performance is constantly driven home to them in order that they may produce at lower

costs. They are taught that overfeeding and underfeeding are equally bad, the former means throwing fodder down the drain, the latter is reflected in the toll of mortality sustained, that balanced rations should invariably be preferred to conventional feeding, that fields too need attention and proper manuring and trace minerals are essential for the production of good crops and that therefore deficiencies in mineral elements should be corrected by a more liberal use of the appropriate fertilizers. The advice being given them is not falling on deaf ears nowadays and this is evinced by better management noticeable in many farms over the Island.

Section I. Animal Husbandry

Cattle

A cow herd, predominantly Friesian, consisting of twelve cows, has been kept at the Farm. The average milk yield per head per year was 934 gallons. This average is a relatively satisfactory one. This is higher than that of the average cow kept in these Islands.

The ration fed to the herd was based on a scientific and economic formula and as this diet has given satisfactory results it is being introduced in private herds. A booklet relating to cow feeding has been printed and is being made available to farmers who wish to feed their cows in accordance with this formula.

Encouragement has been afforded to breeders to use milk cooling plants. The purchase of a number of milk cooling plants has in fact been subsidized by as much as 30%.

Caprines

The herd at the Farm is made up of 25 goats of the Saanen breed. Most of the original stock was imported from Holland. As crossing with the Maltese goat has greatly improved the local strain, service is carried out by Saanen sires whenever such mating is possible for there exists an acute dearth of Saanen billies. To ease the position most of the male kids of the herd are sold to 'bona fide' goatherds. Besides, goatherds are encouraged to bring their goats to the Farm and have them sired by Saanen billy goats kept at the Farm for the purpose.

Swine

The chief aim of keeping swine is to make available sows to breeders. Only the progeny of sows which littered a minimum of eight piglets whose weaning weight average exceeded 30 lbs liveweight at 8 weeks of age are sold.

Once again a Large White Boar was imported from the United Kingdom. This has become a yearly routine for only in such a way can in-breeding be avoided.

Much has been done during the year to improve record keeping. The Pen Card System has been introduced and the history of each sow is meticulously recorded. In this way the sow's performance is perfectly known and quick decisions can be arrived at as to which sows should be kept for further stock purposes.

The stud centre has also been improved a lot. The individual Sow Feeder has been installed in the Sow Resting Ward. Adjacent to it a Boar Pen, with an adjoining Serving Ward has been erected. In this way mating service has become an easy matter.

Trials and Experiments with Pigs

(i) *Bacon Trial*

A bacon trial is going on which will establish the cost required to rear a bacon pig. The experiment will be completed by February, 1964.

(ii) *Piglet Anaemia*

The problem of piglet anaemia which affects piglets reared on concrete floors has been the concern of the Veterinary Services for some time.

An experiment is therefore being carried out to ascertain the causes which bring it about.

(iii) *Feeding Experiments*

A new formula based on protein requirements foro pig feeding is being experimented with. If successful considerable savings will be effected on the feeding bill.

Section II. Poultry, including rabbits

a) *Hens*

i) *Breeding*

400 Pure Light Sussex and 1200 Light Sussex hens were crossed with Rhode Island Red Cocks.

The normal vaccination programme was followed and for the first time for many years the flocks remained entirely free from fowl pox.

The demand for hatching eggs during the first five months of the year was very high and it could not be entirely met for priority is given to the hatching programme. Eggs, not used either for the hatching programme or for hatching purposes by farmers, were supplied to St. Vincent de Paul Hospital.

ii) *Hatchery*

The hatching of sex-linked Rhode Island Red X Light Sussex chicks for sale continued throughout the year, except during the summer months, when the setter and hatcher were partially dismantled for servicing.

The following table gives the quantities hatched, each month, and the value realized on their sale.

Production and Sale of Chicks

Month	Number of chicks produced	Pullets	Cockerels	Value
January	4,697	2,396	2,301	£267 3 6
February	4,822	2,421	2,401	£269 11 3
March	5,126	2,595	2,531	241 18 3
April	4,443	2,161	2,282	182 12 1
May...	4,888	2,412	2,476	202 3 8
June	2,076	946	1,130	82 10 10
November	2,205	1,172	1,033	84 8 6
December	2,209	1,123	1,086	97 6 9
Totals	30,466	15,226	15,240	1,427 14 10

iii) *Experiments*

The feeding and laying trials which were started on the 28th April, 1962 by placing in Laying Batteries and in Pens Thornbers 606, Hhode Island Reds, Light Sussex and Light Sussex x Rhode Island Red were concluded on the 21st July, 1963.

Except in the case of Thornbers 606, production in the cages was ahead of that in the pens. It was also established that autumn and winter eggs are more abundant where artificial lighting is provided to supplement the shorter light days.

Average % Production throughout the trials

	Hybrids	R.I.R.	L.S.	L.S.x R.I.R.
Battery	51.7	50.2	46.7	49.7
Pens	53.4	43.6	31.4	42.4

Turkeys

Only the Broad Breasted White is being kept. This breed is preferred to the American Bronze because of the broad breast and white flesh.

To introduce new blood, 164 day-old poults were imported from the United Kingdom on the 5th June, 1962.

Demand for hatching eggs remained very great and all hatching eggs surplus to Farm requirements found a ready market.

Rabbits

The New Zealand White breed has become very popular and the demand for breeding rabbits remained very pronounced.

Both New Zealand White and Flemish Giants breeds were available for mating services with private does at the Farm Stud Centre. At Mosta, Qrendi and Qormi stud services were also opened.

Private does suffering from venereal diseases were kept at the Farm Rabbit Clinic and were given proper treatment.

Experiments

Cross-breeding trial

A Cross breeding experiment was started on the 19th July, 1962 to test whether crosses with local does, using Flemish Giants and New Zealand White bucks, show any improvement over the local breeds.

Records of matings, feed consumption, mortality, live and dressed weight of carcasses are all being kept and differences carefully analysed.

Section III. Horticulture

The scope behind this section is to carry out trials to gain knowledge on the behaviour of crops and flower plants under certain conditions and pass on such knowledge to farmers, and florists.

In these experiments an eye is kept open on the export market and its relative importance in the agricultural sector is constantly kept in its true perspective.

Trials carried out included:—

1. Potato varieties
2. Potato growing response to fertilizers applied
3. Lucerne yields
4. Mulching with black polythene
5. Tomato varieties
6. Brussels Sprouts
7. Growing of out of season Carnations

All these experiments had something to teach. But the most spectacular advantages have come from the growing of out of season carnations. It has been established that this pursuit is both feasible and remunerative and that a steady market exists for carnations both locally and abroad. Bigger strides are therefore being taken to increase the area under these experiments with a view to increasing the future activities in these lines.

Section IV. Farm Machinery

Several demonstrations were given to show farmers the significant advantages of agricultural machinery over manual labour and the great economies in labour cost that can be effected through the greater use of agricultural machinery.

Machinery equipment was therefore recommended to all those who enquired about the benefits accuring to them from the use of certain types of agricultural mechanical tools.

It is the hope of the Department that in the not distant future exhibits of agricultural machinery would be arranged by some prospective association which might be interested in the spread of mechanical tools for agricultural purposes. Such an institution would no doubt considerably help to increase their popularity among farmers.

XIV. VITICULTURE AND OENOLOGY

Prof. H.P. Olmo Ph.D. of the University of California completed his assignment, which was that of spending about a year in the Islands and draw up a report with a view to improving the varieties of vines grown here and advising on wine manufacture, by the end of March, 1963.

It is understood that he had submitted an exhaustive report to F.A.O. Headquarters immediately after the end of his assignment and this report is therefore awaited with great interest.

In the field of viticulture, considerable progress was made during the year. A Grape Station was set up on approximately five tumoli of land adioning the winery at Buskett and extensive experimentation is being made on (1) table grapes (2) local wine grapes (selection) (3) wine grapes imported namely California selected varieties (4) American rootstock and (5) local varieties of commercial value either for table or wine. It is premature to assess results at this stage, but preliminary observations indicate that Buskett Grape Station will in due course serve as a source of vine material for the improvement of local viticulture.

Ghirgentina grapes were preserved in cold storage and under periodic fumigation for a period of 3½ months, namely, from early September to late December. This was the first time that harvested grapes were made available on the local market for the Xmas season and although the variety itself is not ideal for storage, the grapes in question fetched a handsome price i.e. 5/6 per ratal. It is intended to repeat the experiment in 1964 with another local variety until such time as late varieties, planted at Buskett Station with this particular end in view start producing fruit.

In the field of oenology, the policy initiated by this department towards 1948 is at present realizing reasonable profits. The first aim was to stop imports of little wines which amounted to about £300,000 a year. The second objective which followed as a corollary immediately after that the first was attained is to slowly build up an export trade. The beginnings of this policy are in course of operation and exports exceeding the sum of hundred and fifty thousand pounds annually have already been made. Following trade agreements such as that with the Federal Republic of Germany, it is envisaged that this amount would be greatly increased in the not distant future. This is obviously an achievement well worth mentioning especially when it is recalled that the Department met stiff opposition on the part of those to whom the industry is proving now to be so remunerative.

In 1963, the first Wine Testing Session was held by this Department. This session aimed at the improvement of local wine production since only typical wines derived from recognised local varieties are entered for these sessions. Similar typical wines are produced in very small quantities at Buskett Wine Station where cold storage facilities are available. The first Wine Testing Session has proved a big success and it has encouraged the Department to make it henceforth an annual event.

Through the good offices of Prof. H.P. Olmo, F.A.O. have sent a local student to train in viticulture and pomology in Davies University, California.

It is hoped that within two to three years he will become academically qualified and will be in a position to take up his duties in the Viticulture and Oenology Section.

XV. LAND AND WATER USE SECTION

The Agricultural Chemist is in charge of this Section. It deals mainly with legal and scientific aspects of soil preservation, land transfers and soil survey, and all aspects of research and specialist advisory work in soils and water management. The Agricultural Chemist is also responsible for the examination of compound feeding-stuffs. A Lands Officer who is responsible for land assessments works in close association with this section.

I. *Soils and Nutrition*

1. *Specialist Advisory Work*:—

The Agricultural Chemist gave advice on 27 occasions, as follows:—

(a) animal nutrition — 7

(b) soil problem in glasshouses — 8

(c) soil problems outside glasshouses — 6

(d) irrigation and water use — 6

The Agricultural Chemist addressed farmers in three of the meetings organised by the Extension Service. He also delivered two lectures to the senior technical officers of the Department, one on "Soil Moisture studies with special reference to the black polythene mulching experiments" and the other on "Plant Nutrition studies with special reference to Fertilizer Experiments carried out in Malta". Both these lectures were based on research work carried out by him during the past year.

2. *Water Use Research*

Field observation had led to the conclusion that there is great room for improvement in the utilization of irrigation water resources. Since one way to increase the efficiency of water use in irrigation practice is the adaptation of mulching methods, three mulching experiments were carried out during the past year.

(a) Theoretical mulching experiment. Two large containers measuring 4ft. in length, 1ft. in breadth and 10 inches in depth were filled with 150 rotoli (262½ lbs) of air dry soil and given 50 rotoli of water. One of these containers was covered with black polythene. After 8 days the unmulched container had lost 30 rotoli of water while the mulched container lost only 7 rotoli. This experiment seems to indicate that in shallow soils such as rae usually found in Malta water loss from uncropped soil surface could be as high as 75% of the total water supplied to the soil.

(b) Mulching experiment with lettuce. Plots of five square yards were used in this fully replicated experiment 4 inches of irrigation was given to all the plots before mulched plots were covered with black polythene. Lettuce plants which were planted with a dipper, were not irrigated during the experiment. 24% increase in fresh weight over the control plots was recorded from the mulched ones. Considering the saving in weeding which was only necessary on the unmulched plots, it proved to be an economic proposition to use the black polythene at 2. 7d per square yard for mulching lettuce.

(c) Mulching experiment with Eggplants. In this fully replicated experiment, plots of 5 square yards were subjected to the following treatments:—

1. Mulched with black polythene
2. Mulched with brown paper
3. Unmulched and weeded as required
4. Unmulched and unweeded

In this experiment all the plots were irrigated according to evapo-transpiration data. Equal amounts of water were given to each plot using a water meter in the delivery water line. In the case of the mulched plots, the water was given under the black polythenne or brown paper.

The following table shows the results obtained:—

Treatments	Replicate I		Replicate II		Replicate III		Mean	
	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.
Mulched Black Polythene	43	3	40	5	45	14	43	2
Mulched Paper	28	12	27	3	26	5	27	7
Unmulched Weeded...	15	3	16	10	17	7	16	7
Unweeded	9	13	14	0	16	3	13	5

The spectacular increase in production was attributed to greater water uptake by mulched crops as a result of irrigation under the mulching material.

These facts would indicate that mulching will probably prove to be the greatest single contribution towards increasing crop yields in Malta.

3. *Fertiliser Experiments*

Four fertiliser experiments were carried out during the year. No clear response was recorded in any of the experiments except perhaps in the case of a complete fertiliser 10,12,17 with 2% Magnesium and trace elements.

An attempt, to distinguish whether the variation in plot data, within each treatment, was due to management or to soil factors, has been made during the past year.

A comparison of two sets of plot yield data collected from two potato fertiliser experiments carried out one after the other on the same plots seems to indicate that the difference is mainly due to variation in soil fertility within the same field.

4. *Trace Element Deficiencies*

Three experiments were carried out in connection with trace-element deficiencies. But lack of adequate laboratory facilities limit the progress that can be made in this line. Visual indication of manganese and magnesium deficiencies were however observed during the past year.

II. *Fertile Soils Preservation*

554 building notices for the removal of soil from sites to be developed by private owners in Malta and Gozo were recorded. Soil removed from private building sites amounted to 58,893 cubic yeards in Malta and 6,230 cubic yards in Gozo, while the estimated quantity of soil removed from sites which are being developed by the Civil Government in both Malta and Gozo amounted to 50,320 cubic yards.

Soil transported was used for the reclamation of waste lands at Nghieret, il-Ħandaq, Wied is-Sewda, Iskolba and Żebbieġħ for the improvement of many other lands at Siġġiewi, Marsaxlokk, Żurrieq, Birżebbuġia, Għaxaq, Mġarr and Mellieħa areas for the afforestation at Armier and Marfa, for making of gardens and orange groves at back of newly developed building, and for the filling of roundabouts, road-strips, road pits and for the planting of ornamental trees. The number of building applications received in 1963 shows again a decrease compared with the preceding years, and this decrease is due to a slight relaxation of the building of small private dwelling houses. The quantity of soil removed from Government sites includes as in former years, that cleared from the widening of old and the construction of new roads, playing fields, new schools etc.

The Department of Agriculture exercises constant supervision to prevent loss of fertile soil, which is needed to cover waste lands and to make up wherever possible for the loss of cultivable land brought about by building constructions etc.

III. *Land Transfers*

The following comparative statement shows the number of land transfers effected during the period 1959/63:—

	1959	1960	1961	1962	1963
Number of Land Transfers	640	610	513	578	694
Number of farmers who transferred, bequeathed or sold their lands ...	570	526	444	498	632
Number of farmers who received, inherited or purchased lands ...	614	572	472	536	687

Transfers of land are mainly due to death, infirmity and retirement from work on reaching senility. Other causes are emigration, temporary employment in urban industries and spells of high cost of hired labour.

IV. *Land Assessments*

A total of 249 assessments has been made. Of these 148 were made on behalf of the Public Works Department in connection with the building of schools, factories, drainage, widening and opening of roads. The rest, 101 assessments, were made at the request of the Water and Electricity Department in connection with the extension of water mains and the erecion of electricity poles.

XVI. THE GOZO SECTION

1. *Introduction*

Gozo is predominantly an agricultural island and about 75% of the population make their living out of the soil.

The cultivable area is about 28,500 tmien and of these about 700 are irrigated. But Gozo is more than self sufficient in vegetables and the surplus is regularly transported to Malta where it finds a ready market. However, owing to occasional bad weather the produce cannot be shipped on to Malta and if this is highly perishable it has to be sold at Gozo at whatever low prices it fetches. Hence a sound agricultural policy is absolutely essential for the Gozitan community. I am glad to state that on the whole matters moved from fair to good to the Gozitan farmer in 1963.

a) *Animal Husbandry*

The health of the animals received special attention. T.B. testing continued and reactors were expeditiously put to sleep.

Pigs and poultry are now being vaccinated and the ineidence of mortality has therefore been greatly lowered.

Livestock breeders called for advice much more oftener than previously and this is a sign of good animal management which augurs well for the future.

Every endeavour was made to provide as many breeders as possible with pedigree stock from the livestock Centre. Stud services were also made available to all that requested them.

b) *Horticulture*

The policy of the Department is to orientate towards the growing of intensive horticultural crops which fetch more remunerative prices.

With this purpose in view a series of experiments were made to ascertain the yield, the earliness, the manuring required by certain crops and their management. Trials on tomatoes, cucmbers, bell-peppers, egg-plants, brussel sprouts, onions and strawberries were carried out in the open air, under glass and under polythene.

c) *Floriculture*

Similar experiments were carried out on Carnations, Freisias, Irises and Anemones.

d) *Agriculture*

Experiments were continued and some good results were obtained. New varieties of wheat and barley have been introduced after that these were experimented with in the experimental stations. The Cappelli (wheat) is becoming more widely grown and so is the Rica (barley). Both varieties have shown noticeable improvement in yield and quality over the varieties formerly used.

e) *Plant protection*

Farmers are slowly appreciating the need for spraying their crops to protect them against the ravages of pests and diseases.

A team of two operatives has been set up and it is daily occupied in spraying operations.

Crops that were so often devastated by insects are now being saved and this is reflected in the greater production which is reaching the markets, both local and foreign.

Many farmers convinced of the beneficial results of spraying have bought their own spraying machines and are treating their crops oftener than hitherto with consequent better results.

f) *Laboratory*

No laboratories are found in Gozo but the knowledge gained in the Malta Laboratories is immediately passed over to the technical staff of the Gozo branch who in turn bring it to the notice of farmers and breeders.

2. *Rainfall*

The rainfall, once more, has been below average. The following table gives the rainfall for the period 1960/63:

Month	(in inches) 1960	(in inches) 1961	(in inches) 1962	(in inches) 1963
Jannuary	2.22	1.73	1.50	2.99
February	.20	.43	3.18	3.60
March	1.18	.98	2.35	1.09
April	.25	.14	.52	.35
May	.44	.94	—	.29
June	.06	—	—	—
July	—	—	—	—
August	—	—	—	—
September	1.04	.34	.59	.93
October	.41	.20	6.41	3.64
November	.34	1.70	1.99	.18
December	4.97	1.25	2.98	2.73
	11.11	7.71	19.52	15.80

3. *Land under cultivation*

It is estimated that the area of land, in Gozo, is divided as follows:—

Area under dry cultivation	27,866 tmien
Area under irrigation	698 tmien
Area of waste land	1,757 tmien
	30,321 tmien

4. *Agricultural machinery*

The purchase of agricultural machinery is being greatly encouraged with a view to producing at an ever lower unit cost. Rotavators, spraying machines, tractors with all types of attachments, and other mechanical implements are now widely used.

Fragmentation, however, remains the real drawback and the difficulties facing consolidation appear to be as insurmountable as ever. Yet no extensive use of agricultural machinery can be made before farms become larger, very much larger, in area.

5. *Public Gardens and Plantations*

These have now become the responsibility of the Gozo Civic Council.

6. *Public Nurseries*

These are located mainly at Kerċem. From these nurseries most of the requirements of trees, plants, shrubs and flowers are met. Because of their importance special attention has been paid to them. Every year new additions are made and during 1963, various varieties of peaches, nectarines and apricots were added.

So well are these nurseries kept that farmers, florists and amateur gardners call very frequently to see for themselves what is being done. The nurserymen here are very helpful and they take all pains to demonstrate to all visitors how the propagation of trees and plants is best carried out.

7. *Viticulture and Wine Manufacture*

There is no disputing the fact that viticulture has been developing fast and recently has advanced at an unprecedented step.

This expansion has its beginning in the Wine Control Regulations which imposed certain standards in wine manufacture. Gradually local wines monopolized the local market and for some years exports on a modest scale have been developing. This upward trend in the trade made Commercial Vintners offer remunerative prices to growers who in response are growing more and better quality vines.

The recent visit by Prof. Olmo of Davies University, California, U.S.A. has been of inestimable value to the wine industry as a whole.

In Gozo experimental vineyards are being kept and the results obtained are communicated to vine growers. The most favoured rootstock varieties are, at present, the 14OR and the 1103P.

8. *Afforestations*

Works on this scheme have been continued. Several sites on Government waste lands have been selected. At Ta' Blankas, limits of Xewkija, the site has been prepared for planting. Over a thousand truck loads of fertile soil have been dumped here and immediately it is levelled, planting of olive and carob seedlings will start.

Since 1959 some 2400 trees have been planted and places that had for hundreds of years been nothing but desolate wastes have become covered with trees and this has enhanced the landscape considerably.

10. *Livestock Centre*

The establishment of a livestock Centre has been most beneficial to the Island's farming community.

The aims of the centre are various and include (i) demonstrations to farmers, (ii) farm management, (iii) stud services, (iv) stock supply needs and (v) experiments.

i) *Demonstrations to farmers*

Farmers are encouraged to visit the farm and see for themselves how the several animals are kept and the type of animals that are reared. The performance of each breed is also brought home to the farmers to school them to be selective in raising their flock.

ii) *Farm management*

Records are kept showing the expenditure and revenue in respect of each class of animal. The history of the progeny is also written down. Culling is recorded and each individual animal's performance in regard to milk yield and to fodder/meat conversion is registered.

In this way, it is possible for the best progeny to be reared and thus there is an ever improving strain in the flocks and herds kept.

ii) *Stud Services*

The best stud bulls, boars and rams are kept. As the sires are half the breed, the progeny of these animals generally show an improvement over their forebears.

iv) *Source of supply*

The offsprings that show no improvement over their forebears are slaughtered but those that exhibit improvement in one way or another are sold to breeders to help improve the local breeds.

v) *Experiments*

Experiments are made with a view to improving the health of the breeds and to obtaining animals with better conformation.

The nutritive value of certain items of folder is constantly being observed in order that only the best feeds consonant with economy are fed to animals. Bulls, boars, rams, poultry and rabbits were kept at the farm during the year.

11. *Financial Assistance to Farmers*

Grants and loans were made to farmers to help them set up poultry units, erect glasshouses and buy agricultural implements.

Four glasshouses thus aided were constructed and the total number of such houses has gone up to 31 in all. The number of poultry units is now 24.

Through this kind of assistance, out of season tomatoes that used to be imported are now being produced locally, and the importation of eggs in shell has significantly gone down.

12. *Extension Service*

This Service has been contributing in breaking if not in thawing althogether the one time impenetrable ice of conservatism of the farmer. He is now accepting advice without adverse comment and putting it in practice more often than not. The beneficial results of modern techniques are daily convincing the farmer that nature should be helped to produce better results.

It is hoped to strengthen this service as soon as the means become available.

13. *Annual Agricultural Show*

On the east of Santa Marija, the Agricultural Show is held. Many people from Malta flock to Gozo to see the various exhibits.

No fewer than 2600 exhibits were shown. These included milch and other animals, cereals, fruit, birds and fish.

The Department of Agriculture also put up stands but these were not for competition purposes but simply to increase the number of exhibits and thus enhance the value of the show.

14. *Fertile Soil (Preservation) Ordinance* 1935.

The preservation of Fertile Soil Ordinance has been of inestimable value to stem the encroachment on the cultivable area of the land. In this way what is lost on some land because of the erection of buildings and other structures is gained on the other by dumping the soil on land that is barren and is thereby reclaimed.

Some 26,000 cubic yards of fertile soil were thus shifted from one place to another. By means of this soil many a garden has been set up were none existed before and a number of fields has been reclaimed.

15. *Apiculture*

Production of honey has been kept in view. Beehives were registered and a small subsidy was paid to beehive owners. A number of bee-keepers has collected reasonable quantities of honey and wax. The amateur bee-keepers are always encouraged to discard improvised hives and to keep on using modern beehives for they pay better in the long run.

16. *Anti-fly Campaign*

Unfortunately because of the great number of animals that is reared in Gozo, the common fly for a time thrived in more than customary numbers. But thanks to the constant spraying of fly breeding spots, the number of the flies has considerably gone down again and the position is fast reverting to normal.

XVII. THE CO-OPERATIVE SECTION

The Co-operative Section is entrusted with the registration and supervision of co-operative societies as required by the Co-operative Societies Ordinance and regulations of 1946. The main duty of the cooperative Section at present is the auditing of the Societies accounts. Direct supervision is continually exercised with a view to ascertaining that registered societies are managed in conformity with the Ordinance and the Regulations.

One new society was registered in 1963 but it has not, as yet, started to operate.

Progress in the auditing of accounts has been maintained and there only remains the back load of two societies to be audited.

Two government officials and two co-operative societies officials have been awarded I.L.O. fellowships abroad. The first step in the utilisation of the knowledge obtained has been taken by inviting these officers to form part of a committee to study the Co-operative Societies Ordinance and Regulations and suggest amendments thereto.

The societies engaged in marketing agricultural products are the following:—

1 established at B'Kara
1 „ „ Marsa
1 „ „ Rabat
1 „ „ Żebbuġ
1 „ „ Siġġiewi
1 „ „ Valletta

It is estimated that through these stalls about 23% of the total sales of agricultural products are made.

XVIII. THE FISHERIES SECTION

General

During the year the absorption of the Fisheries Department by the Department of Agriculture which had been in progress for about a year was given official recognition and the Director of Agriculture became also the Director of Fisheries from the 20th February, 1963.

Excellent co-operation made the fusion feasible and the fact that no disadvantage af any sort was suffered by the fishing industry is a proof of the good co-ordination that went on all through the transitional period.

The Catch

Trawling was not very successful but fortunately the other forms of fishing more than made up for this deficiency and the catch for 1963, in fact, exceeded that for the previous year by 222,191 rtal, that is, by 13.17%. This increase has been very encouraging for it is a pointer that further expansion is still feasible. It is considered that mackerel, bogur and corephene fishing admit of much further expansion if only the conventional equipment of pots, lampari and kannizzati are improved both in quality and in numbers.

Future Expansion

Emphasis is being made on medium sized boats. It is considered that given somewhat lager vessels, the radius of activities would be increased with the consequent exploitation of fishing grounds which hitherto had been left untapped. The long-lining method on these new grounds is expected to result in bigger catches, for it is feared that the coastal grounds are being overfished and the catches from them are becoming less and less.

Through grants and loans the construction of bigger vessels is greatly enhanced and the response by fishermen in this direction has been very heartening.

Improvements in all sectors of the industry abroad are closely watched for possible adaptation by us to suit local requirements. This task has been rendered infinitely easier through our association with F.A.O. and their publications which give prominence to most of the innovations introduced in the various techniques of marine fishing the world over.

As a matter of fact these studies have made it possible for us to improve considerably the local fishing techniques by the continual introduction of modern fishing gear and tackle.

In the lampara fishery, to take an example, the conventional material fibres have been replaced by synthetic material which is more durable and much easier to handle. Similarly, tests have been made with polyethelene, as a substitute for sisal rope, for the anchoring of floats in the kannizzati fisheries. The results have been most encouraging and it is intended in the not distant future to accelerate the introduction of this material with a view to reducing the capital outlay costs in this type of fishing, thus facilitating and enhancing the prospects of even larger profits in the immediate interest of fishermen and ultimately in that of consumers through reductions in the price of fish at the retail end.

Other important studies include those of observing the advantages of fishing with underwater lights. This novel idea, is being experimented in Tunisian waters. It is claimed that the light underneath the water attracts much bigger concentrations of fish, but results obtained so far have not been remarkable and they do not appear to justify the implementation of this technique without further periods of observations and studies.

It is hoped however that the present performance may be improved as more is learned about the habits of certain kinds of fish. It is further anticipated that Maltese lampara fishermen may eventually introduce the puretic power block. This is a purse seine mechanical hauler, which reduces the manpower normally needed to an absolute minimum. This hauler is being used mostly in France with very good results. In Israel too it is much in vogue.

There is a novel method of fishing which is being given close attention with a view to eventually introducing it in our waters, the tuna long-lining. This is a Japanese method which is adopted for catching yellow-fin tuna in various parts of the Pacific.

This new technique has been introduced with amazing results in Aden and specimen parts of the main and branch lines have been very kindly suppliied to the Gear Officer of the Fisheries Section, with a view to passing on to operators the necessary information for its adoption in local waters.

Other future aims are (1) the greater use of echo-sounders to help indicate the presence of fish shoals thereby locating better fishing sites for the purpose of encircling (purse) seines and also possibly for experimenting with the mid-water trawls; (ii) the further use of the Radio Telephone and Direction Finding Apparata, for boats to ascertain automatically their exact position or for the location of fishing grounds; (iii) temperature measurements and use of mechanical line haulers in connection with pot and long line fishing.

In view of the need for improving the berthing and other facilites in fishing harbours and anchorages it is intended to increase the Sundry Works in fishing centres and to prepare a suitable plan for further developing Marsaxlokk, as a fishing harbour. Moles in Wied iż-Żurrieq and the building of houses and net stores for fishermen, in order to provide them with the required ameneties for carrying on with their activities without hindrance are also engaging much attention.

The scheme for loans and grants is being revised to cater both for the newcomers in the trade and for the fishermen who desire to increase their range of activities.

It would therefore be seen that a comprehensive programme is in course of preparation and it is envisaged that many of the projects planned would find their way in the Development Schemes which are taking shape in the interests of fishermen.

International Contacts

During the year Dr. R. Raschid, the prospective Assistant Director of Agriculture of Zanzibar was introduced to the Department through the good offices of the Colonial Office. Dr. Raschid was helped to make a thorough survey of the local set-up and of the several modes of local fishing.

Three Adenese nationals were received, this time through assistannce afforded them by the Freedom from Hunger Campaign Committee, and full hospitality was extended to them during their two months training here. The party consisted of a Fisheries Assistant, a Master Fisherman and a Fisherman. They spent much of their time abroad local boats engaged on lampara fisheries and have thus acquired first hand knowledge of the techniques employed locally. Towards the close of their training tour Mr. Valentine Hinds B.Sc., Chief Fisheries Officer, Aden, joined them. The Technical Assistant (Gear) of the Malta Fisheries Section had long discussions with him on the mechanics of Tuna long-lining fishing and he also exhibited films to them in order to better illustrate the several techniques in use.

The Director of Agriculture and Fisheries Malta headed a delegation to F.A.O. Rome. He was accompained by the Chief Fisheries Officer who attended the eleven sittings of the Fisheries Technical Committee preparatory to the Plenary Session.

Research

A fellowship for a period exceeding seven months was granted under U.N.E.P.T.A. Programme to the Vocational Officer with a view to giving him training in Research Work. His tour comprised visits to the United Kingdom, France, Italy and Germany. During all this time he was in contact with F.A.O. Rome from where he received briefing from time to time.

Loans and Grants

Loans and grants were made available to fishermen to help them:—

i) build craft of over 35 palmi (about 30 feet)

ii) replace petrol and petrol/paraffin by diesel engines

iii) purchase the necessary fishing equipment.

The advances were 50% loan and 30% grant in the case of craft building, 40% grant in the case of replamements of engines and 20% grant and 50% loan in the case of fishing equipment. The balance had invariably to be made good by the recipient. In this way only 'bona fide' fishermen applied for these benefits. In all, 36 persons received assistance. Of these benenfits, 9 were in respect of craft, 15 were in regard to replacement of engines and 12 referred to equipment.

The amounts provided under this project totalled £33,000 as loans and £22,000 as grants.

The Winter Fisheries

In winter fishing activities are greatly hampered by rough seas and as fish trawling has not fulfilled expectations, though it did better this year and accounted for 24.43% of the catch, recourse to fishing by pits has been made. This proved to be a very good measure to take. Indeed, the pit catch represented 48.50% of the season's production and hence it is a step well worth further exploitation.

Another 27.07% of the season's catch were got by longlines gill and tangle net fishing.

It is considered that bigger boats would be able to engage in pot fishing on a larger scale and this explains why the building of longer vessels is being greatly encouraged.

The Lampara Season

During the period May to mid-August, the largest catch is brought in by means of the purse seine or Lampara fisheries. This year 328,258 rtal of fish, consisting chiefly of Horse Mackerel (Sawrell) Spanish Mackerel (Cavalli) and bogue (Vopi) were caught. This quantity, though less by 4.07% than that for 1962 represents 63.28% of the season's landings.

The Kannizzati Fisheries

The lampuki fisheries are the chief sources of providing a living to the fishermen. When it is considered that 60% of the year's catch is lampuki their importance to the fishermen need no stress.

This year 1,048,164 rtal of lampuki were hauled in 87.13% of this fish were caught by the kannizzati method, the rest by trawling and long lines.

The lampuki made an early appearance and during September and October bumper catches were made. So great was the abundance on the market that the price went down to a low record. Because of the surplus quantities available a firm has experimented with quick-freezing methods for issue in winter when the supply is invariably meagre. If this measure proves successful, surplus quantities would create no further problems, and the industry could then expand without worries of not finding a market for all the catch.

The Marketing Scheme

Under this scheme which was established by the Fish Marketing Regulations (1957), fishermen consign their catches to the Fisheries Section to be auctioned on their behalf. This scheme is very popular with fishermen for in this way they get almost ready cash for their catches and have no worries running after the defaulting fishmongers.

The wholesale value of the fish landings for 1963 was £283,207 that is £34,437 higher than that for 1962.

The number of fishermen engaged in the industry showed an increase and now exceeds 800. The number of hawkers who are active practically all the year round is about 400.

The Fishing Equipment Supply Service

The scope of the setting up of this service was to introduce modern gear and to make it readily available to fisherment at the lowest possible price. The creation of this service has fulfilled all expectations. Indeed, today no less than 70% of the gear in the fishing industry is made of synthetic fibre.

This service which was started in 1956 has been gaining in popularity ever since. The purchases made during the year were the following:—

1. Cordage	£6,418	18 6
2. Nylon nets	1,269	16 9
3. Trawl nets and twine	1,000	0 4
4. Steel wire rope	92	13 3
5. Trawl glass floats	89	10 3
6. Corkwood	699	7 0
7. Rush (summer)	118	5 0
	£9,688	11 1

The sales for the same period reached £9,549. 13. 1. Of this sum the subsidy element was £1,780. 12. 3.

Vocational Training and Propaganda

Classroom instruction was given regularly on elementary navigation, modern fishing techniques and deck machinery to Elementary Fifth Formers at Marsaxlokk, the Island's premier fishing centre. Most of those attending are sons of fishermen. There is no doubt therefore that such knowledge will serve them in good stead when they themselves replace the older fishing folk.

Sunday broadcasts were a regular feature and fishermen showed great interest in them. This was evinced by the many questions they made on subjects touched upon in these broadcasts.

The paper 'Is-Sajd' continued to be issued to those requesting it. Judging by the great number of requests for it, it may be safely assumed that fishermen are greatly interested in its contents.

The District Offices

There are two district offices, one at Marsaxlokk which meets the needs of fishermen in this area and its limits and the other at Mgarr, Gozo. Here fishermen call to collect payment vouchers, fuel coupons and fishing equipment. Here too they call to report their grievances or their disputes with fellow fishermen in connection with fishing rights on grounds allotted to them.

Maintenance of slipways

This is a constant job, especially in winter when gales cause widespread damage. However, prompt action is always taken and fishermen have continued their activities uninterruptedly throughout the year.

I must in this express my thanks to the Director of Public Works, who appreciating the need for quick action, has invariably responded expeditiously to my requests.

Sundry minor works

A list of works was carried out during the year. These consisted of improvements to existing slipways, minor new constructions and installations of mechanical equipment.

Among these works mention may be made of the construction of the two-hundred foot breakwater at Birzebbugia, the passage-way hewn in the rock at Wied iż-Żurrieq, the slipway at Ramla tal-Bir, Marfa and the two slipways and other works at Dwejra, Gozo.

At Marsaxlokk, two jib-cranes were installed , at Manoel Island a twin gear was provided and at Marsalforn, Gozo a sheave and fair lead hauling plant was set up. Other works included the replacement of the underground piping at the wholesale fish market at Marina, Valletta, etc.

Conclusion

I consider that good results have been obtained in a number of agricultural activities and also some impetus has been given to fishing pursuits which a few years ago were hardly of any economic significance. This forward march has been made possible by the guidance given me by the Hon. Minister of Agriculture, Power and Communications and by the loyal support that I found in all members of my staff who helped me to overcome all difficulties. I therefore wish to place on record my appreciation of the sustained effort put in by all members of the staff during the year under review.

WEIGHTS AND MEASURES

Maltese	*British*	*Metric*
1. *Weights*		
1 uqija	0.93 oz.	0.03 kg
1 ratal	1.75 lbs.	0.79 kg
1 wiżna	8.75 lbs.	3.97 kg
1 qantar	175.00 lbs.	79.38 kg
1280 rtal	2240.00 lbs.	1016.00 kg
2. *Measures of Capacity*		
1 kartoċċ	1.00 quart	1.14 litres
1 kwarta	1.19 gallons	5.40 ,,
1 ġarra	2.38 ,,	10.80 ,,
1 tomna	4.00 ,,	18.18 ,,
1 barmil	9.50 ,,	43.19 ,,
1 salma	64.00 ,,	290.88 ,,
3. *Measures of Length*		
1 pulzier	0.86 ins.	21.83 mm
1 xiber (12 pulzieri)	10.31 ,,	26.19 cm
1 qasba (8 t'xbar)	2.29 yds.	2.10 m
4. *Measures of Area*		
1 qasba kwadra	5.25 sq. yds.	4.39 sq. metres
1 kejla	22.41 ,,	18.74 ,,
1 sieġħ (10 kejliet)	224.10 ,,	187.35 ,,
1 tomna (6 sigħan)	0.28 acres	0.11 hectares
1 wejba (4 tmien)	1.11 ,,	0.45 ,,
1 modd (4 wejbiet)	4.44 ,,	1.80 ,,
5. *Measures of Volume*		
1 xiber kubu	0.63 cu. ft.	17.97 dm3
1 qasba kuba	12.04 cu.yds.	9.20 ,,

Note:— An acre is equivalent to 3.6 tmien
A tomna is a square with sides 110 ft. long.
A hectare is equivalent to 9.1 tmien

TABLE 2

i) *Farm Population* 1955/61

	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61
Whole-time farmers	7,493	7,813	8,100	7,527	7,481	7,330
Part-time farmers	9,749	9,588	8,946	9,184	8,813	8,815
Farm population not engaged in farming	21,452	20,471	20,669	20,456	20,489	20,175
Children	20,234	20,041	19,639	19,034	18,190	17,191
	58,928	57,913	57,354	56,201	54,973	53,511

ii) *Area*

Malta	...	...	94.870 square miles or 60,717 acres
Gozo	...	...	25.899 square miles or 16,575 acres
Comino	...	...	1.075 square miles or 688 acres
			121.844 square miles or 77.980 acres

iii) *Land Distribution* 1955/61

Year	1955	1956	1957	1958	1959	1960	1961
	Tmien	Tmien	Tmien	Tmien	Tmien	Tmien	Tmien
MALTA:							
Agricultural Land							
Dry	120,250	119,137	116,896	114,380	111,664	107,980	105,543
Irrigated	6,468	6,266	6,509	6,324	5,775	5,528	5,470
Waste	21,451	20,495	19,779	19,849	19,288	19,511	18,860
Total	148,169	145,898	143,085	140,553	136,727	133,019	129,873
GOZO:							
Agricultural Land							
Dry	32,698	31,030	31,972	30,691	29,477	29,121	27,866
Irrigated	1,084	993	924	948	765	741	698
Waste	2,203	2,188	2,005	1,923	1,794	1,845	1,757
Total	35,985	34,211	34,901	33,562	32,036	31,707	30,321
TOTAL MALTA AND GOZO ...	184,154	180,109	177,986	174,115	168,763	164,726	160,194

TABLE 3

AGRICULTURE — GRANTS AND LOANS — 1958/59 — 1963/64

Purpose	1958/59		1959/60		1960/61		1961/62		1962/63		1963/64	
	Grants	Loans	Grants	Loans	Grants	Loans	Grants	Loans	Grants	Loans	Grants	Loans
	£ s. d.	£ s. d.	£	£	£ s. d.	£ s. d.	£	£	£	£	£	£
Glasshouses	640 0 0	2,080 0 0	—	—	2,593 0 0	8,932 0 0	2,073	7,272	2,510	8,572	7,335	11,992
Poultry Units	— — —	976 0 0	—	—	1,856 0 0	7,436 0 0	2,906	11,788	4,013	14,479	7,898	16,461
O.I. Equipment	9,085 10 0	3,848 10 0	—	—	5,474 13 6	9,655 8 0	1,966	835	825	1,335	1,985	1,338
O.I. Equipment & Rot. Cultiv. (Combined)	670 0 0	1,513 0 0	320	564	3,181 14 0	5,744 0 0	1,452	4,062	—	—	—	—
Grinding Mill and Milk Machine	— — —	— — —										
Rotary Cultivators	— — —	2,277 0 0	—	16,547	— — —	7,795 0 0	—	10,908	—	4,040	—	3,102
Mist-Sprayers	— — —	50 0 0	—	114	— — —	251 0 0	—	50	—	—	—	—
Water-Pumps	— — —	1,295 0 0	—	—	— — —	75 0 0	—	120	—			
Cultivators Engines	— — —	— — —	—	450	— — —	— — —	—	—	—	—	—	
Reversible plough	— — —	— — —	—	55	— — —	— — —	—	280	—	—		
Rotary cultivator with pump	— — —	— — —	—	400	— — —	— — —	—	—	1,324	986	200	
Rotary cultivator with mist-sprayer	— — —	— — —	—	1,238	— — —							
Cowsheds, stics, fodder-stores, etc.	— — —	4,392 0 0	—	—	— — —	— — —	—	800	—	—		
Hammermill & trailer ...	— — —	100 0 0	—									
Repayment of Debts... ...	— — —	— — —	—	—	— — —	— — —	—	—	—	—	—	—
Fodder and Fertilizers ...	— — —	— — —	—	—	— — —	— — —	—	—	—	—	—	—
Vans and trucks	— — —	— — —	—	—	— — —	— — —	—	—	—	—	—	—
Livestock, Cows, etc.... ...	— — —	— — —	—	—	— — —	— — —	—	—	—	3,700	—	—
Purchase of Land	— — —	— — —	—	—	— — —	— — —	—	—	—	—	—	—
Miscellaneous	— — —	— — —	—	—	156 12 6	— — —	616	—	—	—	—	—
Total	£10,395 10 0	£38,431 10 0	£320	£19,368	£13,262 7 6	£39,886 8 0	£9,013	£36,115	£8,672	£33,112	£17,418	£32,893

TABLE 4

IMPORTS OF SEED POTATOES 1963

Date	Name of Ship	Arran Banner		Alpha "Denmark"		Alpha "Holland"		Up-to-date		Craig Royal		Other Varieties	
		Tons	Cwts.	Tons	Cwts.	Tons	Cwts.	Tons	Cwts.	Tons	Cwts.	Tons	Cwts.
11 11 63	Mode	700	—	—	—	—	—	—	—	—	—	—	—
25 1 63	Majne	250	—	—	—	—	—	1	2	18	—	—	12
	,, ...	116	13	—	—	—	—	—	—	—	—	—	—
	,, ...	116	13	—	—	—	—	—	—	—	—	—	—
	,, ...	116	14	—	—	—	—	—	—	—	—	—	—
9 12 63	Meike...	792	18	—	—	—	—	—	—	—	—	—	—
11 12 63	Franz...	—	—	—	—	100	—	—	—	—	—	—	—
	,, ...	—	—	—	—	30	—	—	—	—	—	—	—
16 12 63	Munin	453	1	—	—	—	—	—	—	—	—	—	—
18 12 63	Samos	—	—	100	—	—	—	—	—	—	—	—	—
18 12 63	Argus...	—	—	—	—	90	—	—	—	—	—	—	—
	,, ...	—	—	—	—	20	—	—	—	—	—	—	—
	,, ...	—	—	—	—	20	—	—	—	—	—	—	—
20 12 63	Leans...	—	—	500	—	—	—	—	—	—	—	—	—
	,, ...	—	—	80	—	—	—	—	—	—	—	—	—
20 12 63	,, ...	—	—	20	—	—	—	50	—	—	—	—	—
21 12 63	Inga-Corthan	200	—	—	—	—	—	—	—	4	—	—	—
	,, ,, ...	200	—	—	—	—	—	—	—	—	—	—	—
	,, ,, ...	83	—	—	—	—	—	—	—	—	—	—	—
	,, ,, ...	117	—	—	—	—	—	—	—		—	—	—
28 12 63	Inga-Gorthan ...	200	—	—	—	—	—	—	—	—	—	—	—
	,, ,, ...	200	—	—	—	—	—	—	—	—	—	—	—
		3,545	19	700	—	260	—	51	2	22	—	—	12

Total 4,579 tons 13 cwts.

TABLE 5

POTATOES EXPORTED DURING 1961/63 SEASONS

Date	Destination	Quantity			Date	Destination	Quantity			Date	Destination	Quantity		
		Tons	Cwts.	Qrs.			Tons	Cwts.	Qrs.			Tons	Cwts.	Qrs.
8 4 61	London	287	9	—	5 4 62	Liverpool	24	10	—	6 4 63	London	16	8	2
11 4 61	Liverpool ...	139	—	—	8 4 62	London	123	15	2	22 4 63	London	288	10	—
14 4 61	Leith	500	—	—	17 4 62	London	146	13	—	23 4 63	Liverpool	230	4	2
17 4 61	London	169	—	2	16 4 62	Rotterdam	1	—	—	24 4 63	Rotterdam/Leith ...	155	—	—
19 4 61	Glasgow	800	—	—	18 4 62	London	76	13	—	24 4 63	London	101	—	—
20 4 61	Glasgow	662	17	—	19 4 62	Liverpool	173	15	—	30 4 63	London	628	5	2
22 4 61	U.K.	400	—	—	24 4 62	London	340	8	—	1 5 63	Rotterdam/Leith ...	192	13	2
17 4 61	Holland	301	11	—	26 4 62	Rotterdam	82	1	—	3 5 63	London	595	5	2
20 4 61	Holland	923	1	—	1 5 62	London	659	16	—	6 5 63	Liverpool	672	17	2
27 4 61	London	610	5	2	4 5 62	Liverpool	344	12	2	8 5 63	Rotterdam/Leith ...	207	10	—
28 4 61	U.K.	405	—	—	5 5 62	Liverpool	336	12	2	9 5 63	U.K.	405	—	—
29 4 61	Glasgow	304	2	2	4 5 62	London	—	2	—	12 5 63	Liverpool	325	—	—
25 4 61	Rotterdam ...	277	—	—	10 5 62	Trieste	10	—	—	13 5 63	Rotterdam/Leith ...	598	12	—
28 4 61	Rotterdam ...	640	16	—	12 5 62	London	685	4	2	13 5 63	London	768	13	—
2 5 61	U.K.	530	—	—	14 5 62	Liverpool/Glasgow...	140	—	—	16 5 63	Leith	250	—	—
5 5 61	Liverpool ...	285	14	—	15 5 62	Rotterdam	480	—	—	16 5 63	Rotterdam/Leith ...	625	—	—
7 5 61	Holland	641	—	—	17 5 62	London	377	10	—	17 5 63	London	507	10	—
8 6 61	U.K.	500	—	—	19 5 62	London	125	—	—	17 5 63	London	460	—	—
10 5 61	London	10	5	2	19 5 62	Rotterdam	374	19	2	21 5 63	London	325	—	—
11 5 61	U.K.	450	—	—	19 5 62	Liverpool	287	1	—	21 5 63	London	492	10	—
13 5 61	Holland	518	16	—	22 5 62	London	100	—	—	22 5 63	Rotterdam	528	15	—
30 5 61	Holland	111	1	—	24 5 62	Liverpool	121	15	—	25 5 63	Rotterdam/Leith ...	367	9	2
9 6 61	Holland	42	10	—	26 5 62	Holland/Leith ...	355	4	2	25 5 63	Liverpool/Glasgow...	1,049	15	—
16 6 61	U.K.	258	—	—	5 6 62	Gothenburg/Sweden	—	—	3	29 5 63	Holland	200	—	—
					8 6 62	U.K. Port	54	7	—	30 5 63	London	583	10	—
										1 6 63	Liverpool	425	5	2
										6 6 63	Rotterdam/Leith ...	173	10	2
		9,767	9	—			5,421	8	3			11,173	5	2

TABLE 6

ONIONS EXPORTED DURING 1961/63 SEASONS

Date	Destination	Quantity			Date	Destination	Quantity			Date	Destination	Quantity		
		Tons	Cwts.	Qrs.			Tons	Cwts.	Qrs.			Tons	Cwts.	Qrs.
9 6 61	Holland	31	11	—	19 6 62	Glasgow	200	—	—	12 1 63	Tripoli	24	16	2
16 6 61	U.K.	122	10	—	20 6 62	Rotterdam/Leith ...	195	—	—	22 1 63	Tripoli	17	3	2
17 6 61	London	137	1	—	22 6 62	Liverpool	65	—	—	2 2 63	Tripoli	7	4	–
21 6 61	Holland	255	—	2	24 6 62	Rotterdam/Leith ...	111	10	—	23 6 63	Rotterdam	125		
30 6 61	London	59	17	2	25 6 62	London	552	10	—	27 6 63	London	597	9	2
25 6 61	London	—	7	1	26 6 62	London	200	—	—	27 6 63	London	378	19	2
1 8 61	Germany... ...	—	7	1	28 6 62	London	250	—	—	28 6 63	Liverpool	100		
					28 6 62	London	273	4	3	2 7 63	London	105	8	–
					28 6 62	London	50	—	—	2 7 63	Leith	25		
					3 7 62	London	181	16	2	6 7 63	Rotterdam	208	5	
					11 7 62	London	381	3	2	6 7 63	Liverpool	93	11	
					17 7 62	Sweden	—	—	2	9 7 63	Liverpool/Glasgow ...	252	13	
					13 11 62	Tripoli	15	13	—	13 7 63	London	205	2	2
					23 11 62	Tripoli	28	11	—	23 7 63	London	5	7	2
					1 12 62	Tripoli	30	19	2					
					10 12 62	Tripoli	32	6	—					
		606	14	2			2,567	14	3			2,146	–	–
	U.K.	319	15	3		U.K.	2,276	4	3		U.K.	1,763	11	—
	Holland	286	11	2		Holland	184	—	—		Holland	333	5	
	Germany... ...	—	7	1		Tripoli	107	9	2		Tripoli	49	4	—
						Sweden	—	—	2					
		606	14	2			2,567	14	3			2,146	—	—

TABLE 7

SALE OF VEGETABLES FROM PITKALI MARKETS

Vegetables	1959		1960		1961		1962		1963	
	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value
		£		£		£		£		£
Artichokes (G)	689,532	9,461	930,281	6,964	1,090,510	9,572	827,326	9,769	974,038	12,500
Artichokes (J)	69,722	1,390	88,655	2,105	66,639	2,274	73,068	2,316	69,914	1,950
Beans Broad	792,131	10,710	555,275	15,401	491,964	8,658	583,929	13,113	798,159	9,711
Beans French	89,279	3,663	67,483	3,636	48,636	3,011	49,241	2,723	64,797	2,610
Beetroot (Unt.)...	181,839	1,633	190,491	2,178	196,962	2,024	239,898	2,158	209,027	1,932
Bellpepper	151,967	3,015	148,701	4,005	194,228	5,801	191,632	5,493	240,297	4,685
Broccoli	397	14	1,616	49	998	32	1,598	36	827	16
Cabbages...	2,481,743	21,213	1,968,038	21,015	1,649,823	21,034	173,658	27,106	2,223,034	23,144
Carrots (T)	18,029	173	12,200	103	9,751	86	11,978	110	10,049	86
Carrots (Unt.)	1,043,689	10,423	1,000,240	12,594	1,107,476	14,464	1,163,134	13,937	1,342,436	14,803
C'Flowers (T.)	5,000,875	28,676	3,074,471	23,296	3,101,728	24,345	2,155,404	29,886	2,991,617	32,920
C'Flowers (Unt.)	1,066,647	11,754	1,333,747	20,115	1,174,792	21,069	1,566,994	22,723	1,545,643	15,218
Celery	333,222	4,059	297,341	4,408	348,246	5,132	303,049	5,017	356,889	5,019
Centenary	1,918	28	1,690	28	975	414	55	1	284	6
Chickpeas	116,458	849	66,038	723	34,203	414	50,385	562	72,799	726
Cucumbers	128,920	2,351	124,929	2,974	127,863	3,051	101,415	3,400	116,913	3,236
Eggplant...	159,357	2,360	178,399	3,766	221,085	4,535	184,162	4,168	237,304	4,109
Endive	194,868	1,880	183,805	1,377	189,125	2,026	246,349	2,251	252,836	2,077
Garlic Dry	38,922	792	24,872	1,048	7,351	880	25,065	1,438	70,684	1,066
Garlic Green	157,758	2,268	146,143	1,600	82,028	5,208	145,686	5,984	242,376	3,290
Gourds	248,990	2,267	212,840	2,825	256,073	3,431	240,124	3,549	372,681	4,413
Fennel	760	9	1,014	11	263	2	264	2	22	

TABLE 7

SALE OF VEGETABLES FROM PITKALI MARKETS (cont.)

Vegetables	1959		1960		1961		1962		1963	
	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value
		£		£		£		£		£
Kohlrabi...	1,652,812	15,007	1,668,663	17,444	1,609,113	18,113	1,720,090	17,809	1,790,561	18,202
Leeks	8,465	83	10,178	121	8,441	114	7,479	70	10,534	90
Lettuce	880,709	13,724	915,858	17,954	971,519	17,517	875,268	17,810	928,906	16,784
Marrows Long	424,541	4,325	449,641	6,451	571,790	12,039	477,967	7,145	471,871	5,805
Marrows Veg.	1,103,206	20,353	918,475	28,790	897,617	28,438	1,038,292	28,736	1,123,313	26,594
Mint Herbs	407	6	611	14	748	18	465	11	300	6
Onions Dry	1,262,013	13,913	742,710	20,171	738,279	22,052	1,069,075	18,399	1,381,810	13,528
Onions Green	693,252	6,791	298,129	2,399	531,002	9,524	627,966	6,418	424,700	2,817
Onions Pickles	14,735	168	1,455	32	1,885	37	6,939	125	9,589	158
Parsley	41,954	914	44,559	1,081	46,166	1,323	49,982	,351	48,268	1,295
Potatoes Sp.	3,896,213	51,261	2,444,278	59,448	3,156,012	74,694	1,933,677	66,974	3,540,468	63,345
Potatoes Wtr.	1,153,576	20,101	2,282,077	38,248	2,038,004	79,738	2,113,081	49,317	2,213,074	54,967
Pumpkins	1,296,554	13,644	1,153,767	19,877	1,105,628	21,209	1,222,543	20,729	1,042,943	20,524
Peas	310,376	9,720	242,445	13,349	244,139	9,558	150,345	7,742	267,237	9,281
Radishes...	4,032	73	1,056	38	4,450	206	5,490	216	5,396	133
Seakale Beet	1,071	12	222	2	880	12	571	7	737	4
Spinach	275,068	4,449	287,286	5,563	329,321	6,104	300,729	4,737	285,876	4,252
Tomatoes Eng.	584,266	12,729	557,206	23,191	558,511	26,283	704,401	32,340	746,744	31,067
Tomatoes R.	1,472,795	17,526	925,680	20,899	1,028,668	21,574	773,014	15,169	970,486	14,833
Tomatoes O.	1,272,119	11,185	1,436,894	23,558	1,942,988	29,371	908,564	15,136	966,114	13,225
Turnips	3,623	81	1,650	26	5,054	82	369	9	5,013	68
		335,063		428,877		515,469		465,992		440,495

TABLE 8
SALE OF FRUIT FROM PITKALI MARKET

Fruits	1959		1960		1961		1962		1963	
	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value
		£		£		£		£		£
Apples	230,876	6,206	500,679	14,469	402,213	12,732	85,689	4,938	242,150	8,645
Apricots	3,256	303	2,424	241	4,136	528	5,509	564	2,156	257
Bambinella	23,024	1,326	40,243	2,922	20,153	1,285	11,324	1,126	26,138	1,904
Bananas	7,998	92	5,139	64	3,885	52	2,757	37	942	11
Blackberries	6,599	462	3,034	231	4,033	266	4,524	310	7,517	502
Cherries	28	7	25	7	—	—	26	9	—	—
Figs	10,047	189	6,235	191	6,771	242	1,829	63	2,699	89
Figs Early	232,226	6,927	257,972	7,570	162,485	4,796	137,519	4,876	194,342	5,865
Figs Late	44,842	929	40,475	1,196	40,115	930	33,798	1,285	44,196	1,203
Grapes	871,288	23,029	575,409	22,088	558,167	24,771	513,484	20,346	514,467	18,421
Lemons	56,087	4,155	63,784	4,720	67,924	5,764	69,406	5,145	40,318	4,717
Lemons (Swt.)	66	3	—	—	118	8	132	7	50	3
Medlars	25,596	842	27,053	1,059	35,010	1,027	19,658	656	34,043	1,203
Melons (Sug.)	586,528	8,786	365,746	9,315	347,640	8,788	302,603	9,363	628,270	12,743
Melons (Water)...	495,646	8,271	441,522	8,253	376,487	10,032	341,238	9,349	464,768	9,542
Melons (Winter)	314,679	4,404	165,210	2,970	151,097	3,533	171,250	3,248	251,009	4,077
Mulberries	2,528	72	4,046	110	3,917	98	2,143	67	5,341	127

TABLE 8
SALE OF FRUIT FROM PITKALI MARKET (cont.)

Fruits	1959		1960		1961		1962		1963	
	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value
		£		£		£		£		£
Oranges	40,154	3,637	53,823	4,636	62,119	5,690	26,160	2,779	39,132	3,832
Nectarines	35	2	248	18	1,588	67	346	16	1,022	49
Oranges (Sw.)	6,097	744	10,864	1,178	7,734	1,334	3,888	559	7,443	877
Peaches	105,078	8,183	152,574	13,116	437,933	23,179	151,615	13,379	597,743	29,643
Pears	39,749	1,760	36,785	2,185	38,380	3,170	15,579	1,100	55,011	2,894
Pears (Pr.)	35,681	1,341	60,059	391	56,189	397	62,883	497	21,583	164
Plums	28,475	2,078	14,495	1,481	115,213	3,207	39,622	3,595	69,861	4,468
Plums (Cherry)	93,168	3,701	79,091	5,539	185,420	6,698	115,105	6,296	70,366	2,944
Pomegranates	119,847	1,760	166,552	2,245	156,742	3,126	63,840	1,506	81,235	1,690
Prunes	1,322	60	203	17	404	27	25	3	922	41
S'Berries (E)	37,659	7,170	36,845	6,803	52,933	9,865	41,101	7,954	60,768	11,778
S'Berries (L)	2,757	1,472	3,556	1,602	2,339	1,206	1,055	621	822	531
Tangerines	12,907	1,074	17,595	1,245	11,556	1,064	4,559	547	8,199	893
Olives	1,612	46	223	7	688	26	164	10	1,542	35
Grape Fruits	88	13	86	19	36	5	1,043	124	35	8
		£99,044		£115,888		£133,853		£100,375		£129,156

TABLE 9

YEARLY ENUMERATION OF LIVESTOCK 1954-61

Year	Caprines		Ovines		Bovines		Swine		Equines		Poultry and Rabbits	
	Malta	Gozo	Malta	Gozo	Malta	Gozo	Malta	Gozo	Malta	Gozo	Malta	Gozo
1954	27,279	15,129	11,666	7,616	439	2,035	20,576	5,024	6,328	2,355	192,096	136,097
1955	29,906	14,859	11,366	7,630	5,404	1,531	10,994	1,617	5,282	2,016	274,893	154,730
1956	29,172	14,812	10,299	6,422	7,170	1,972	13,183	1,990	5,339	1,911	270,146	155,673
1957	25,611	13,726	9,204	5,614	7,066	2,661	10,493	2,805	4,955	1,825	244,473	144,042
1958	23,743	13,201	9,233	5,778	7,626	2,172	12,381	3,981	4,748	1,827	252,588	157,307
1959	22,625	13,246	8,649	5,616	7,429	2,107	12,094	2,701	4,587	1,757	249,502	131,840
1960	21,010	13,678	7,909	5,107	7,206	2,172	11,217	2,829	4,422	1,698	264,515	132,513
1961	18,587	12,425	7,190	4,413	6,282	1,808	12,507	3,885	4,290	1,603	264,320	148,983

TABLE 10

Diseases and other causes of unsoundness of meat from 1st January to 31st December, 1963.

Disease	Cattle	Equines	Pigs	Sheep	Goats	Lambs	Kids	Total
Decomposition ...	2	—	—	—	—	—	—	2
Emaciation	1	—	—	—	—	—	—	1
Peritonitis	1	—	—	—	—	—	—	1
Pneumonia	2	—	—	—	—	—	—	2
Putrefaction	7	10	11	6	2	—	—	36
Septicaema	5	—	3	8	9	—	—	25
Swine Erysipelas ...	—	—	4	—	—	—	—	4
Tetanus	—	1	1	—	—	—	—	2
Tuberculosis	1	—	—	—	—	—	—	1
Swine Fever	—	—	37	—	—	—	—	37
Totals	19	11	56	14	11	—	—	111

TABLE 11

Vaccination of pigs and inoculation of poultry during 1963

Month	Poultry			Swine	
	Fowl Typhoid & Cholera	Fowl Pest	Fowl Pox	Swine Erysipelas	Swine Fever
MALTA					
January...	60	1,780	1,505	212	506
February	400	4,640	3,260	170	675
March	—	10,464	1,770	154	412
April	655	8,871	1,981	281	727
May	620	7,489	4,190	409	834
June	320	5,375	2,060	450	955
July	700	6,709	4,256	268	1,349
August	1,156	6,776	13,672	259	1,079
September	170	7,341	5,140	264	599
October	971	4,462	6,731	202	506
November	290	3,330	5,126	188	400
December	370	5,290	6,600	308	701
Totals	5,712	72,527	56,291	3,165	8,743
GOZO					
January...	—	—	—	—	—
February	—	—	1,190	305	—
March	—	—	—	—	—
April	—	7,500	6,250	230	24
May	—	2,000	2,100	174	24
June	—	—	—	—	—
July	—	—	—	—	—
August	—	—	—	—	—
September	—	—	—	—	—
October	—	—	—	—	—
November	—	—	2,000	150	400
December	—	—	—	—	—
Totals	—	9,500	11,540	859	448

TABLE 12

Stocks of imported store cattle — 1st January to 31st December, 1963.

Month	Importation		Total imported	Slaughtered		Total slaughtered	Balance	
	Bulls	Bullocks		Malta	Gozo		—	+
	Stock on hand on 1st January, 1963							2,514
January	—	680	680	740	25	765	85	
February	—	318	318	681	24	705	387	
March	—	709	709	739	21	760	51	
April	—	639	639	669	16	685	46	
May	—	581	581	621	24	645	64	
June	—	1,059	1,059	539	14	553		506
July	—	603	603	682	15	697	94	
August	—	353	353	549	15	564	211	
September	—	495	496	534	18	552	57	
October	—	1,235	1,235	754	24	778		457
November	—	1,075	1,075	695	21	716		359
December	—	885	885	630	20	650		235
Totals	—	8,632	8,632	7,833	237	8,070	995	4,071

Stock on hand on 1st January, 1963	—	2,514
Imported during 1963		8,632
		11,146
Slaughtered during 1963		8,070
Stock on hand on 1st January, 1964		3,076

Slaughtered during 1960-63

Year	*Imported*	*Local*	*Total*
1960	10,834	2,835	13,669
1961	9,442	2,800	12,242
1962	9,822	2,718	12,540
1963	8,070	2,570	10,640

TABLE 13

Slaughterings — 1st January to 31st December, 1963.

Month	Cattle	Equines	Pigs	Sheep	Lambs	Goats	Kids
MALTA							
January	922	37	3,495	360	419	531	111
February	839	35	3,220	326	355	498	73
March	976	42	3,457	359	318	500	218
April	845	36	3,244	284	150	501	267
May	842	43	3,495	320	82	580	176
June	749	40	2,829	306	11	427	120
July	856	41	2,689	261	11	443	93
August	729	42	2,480	290	16	449	75
September ...	692	35	2,142	281	290	459	30
October	857	46	2,702	369	1,062	571	23
November ...	814	43	2,632	351	1,205	647	31
December... ...	742	43	2,718	381	733	632	71
No. of Animals ...	9,863	483	35,103	3,888	4,652	6,238	1,288
Total weight ...	3,085,510	105,759	2,890,820	141,674	42,502	160,391	6,061
Average weight ...	313	219	82	36	9	25	5
GOZO							
January	82	1	374	22	91	28	26
February	70	—	379	24	74	29	14
March	63	—	427	18	73	26	47
April	65	—	297	10	61	9	77
May	81	1	298	14	26	8	35
June	69	2	267	9	—	10	20
July	79	—	308	9	—	10	10
August	84	—	261	11	6	6	3
September ...	69	—	184	16	29	15	—
October	75	1	208	25	120	14	—
November ...	73	—	260	27	134	19	—
December... ...	67	—	248	21	69	19	23
No. of Animals ...	877	5	3,511	206	683	193	255
Total weight ...	310,998	1,195	320,636	5,368	7,382	3,597	1,727
Average weight ...	347	239	91	27	11	19	7

TABLE 14

Respective weights in rotoli of animals slaughtered during 1963

Month	Cattle	Equines	Pigs	Sheep	Lambs	Goats	Kids
MALTA							
January	302,884	8,240	283,299	12,787	4.041	13,303	521
February ...	275,590	7,425	277,967	11,688	3,160	12,479	395
March	317,838	8,660	291,675	12,974	2,928	12,332	1,029
April	284,185	7,395	272,572	10,248	1,391	12,199	1,156
May	287,440	8,680	299,943	11,620	755	14,055	825
June	247,282	8,476	236,389	11,246	129	10,534	545
July	258,037	8,355	208,387	9,284	117	17,077	415
August	206,001	8,560	200,793	10,720	164	11,612	360
September ...	205,042	7,190	176,622	10,363	2,763	11,285	153
October	244,855	9,888	221,830	13,590	9,754	14,135	119
November ...	241,754	11,920	208,658	12,872	11,130	15,934	161
December... ...	214,602	8,970	212,685	14,282	6,170	15,446	382
Total ...	3,085,510	103,759	2,890,820	141,674	42,502	160,391	6,061
GOZO							
January	27,605	256	33,617	562	1,004	497	218
February	25,443	—	35,405	646	829	567	117
March	22,626	—	40,426	450	903	450	281
April	23,484	220	27,005	249	625	160	516
May	29,526	—	28,358	345	282	147	241
June	24,886	393	25,399	228	—	180	133
July	26,925	—	27,367	234	—	183	52
August	28,970	—	21,910	284	65	104	20
September ...	26,309	—	16,224	446	303	278	—
October	26,619	326	18,802	667	1,221	297	—
November ...	24,767	—	23,530	711	1,397	348	—
December... ...	23,838	—	22,593	546	753	386	149
Total ...	310,998	1,195	320,636	5,368	7,382	3,597	1,727

TABLE 15

i) *Cooperative Societies on Register as on 31st December, 1963*

Primary:

Agricultural Produce	15	(a)
Agricultural Equipment	3	
Tailors (Supply)	1	(b)
Milk Producers	1	
Consumers	3	(c)
Milk & Agricultural Producers	1	
Wine Producers	1	
Central:		
Agricultural	1	
	26	

(a) 3 in course of liquidation
(b) 1 „ „ „ „
(c) 2 „ „ „ „

ii) *Principal Items of Assets and Liabilities of Cooperative Societies 1963*

Societies:

Number of Societies	20
Membership	3,100

Liabilities:

Share Capital Contributions	55,679
Reserves & Provisions	15,133
Creditors	112,120
Disposable Balance	11,951
Loans	13,361
Deposits	1,452
Total	£209,696

Assets:

Immovable Property	95,669
Movable Property & Stock in hand	41,345
Debtors	41,999
Cash in hand and at Banks	30,058
Investments	625
Total	£209,696

TABLE 16

Local Catch and Imports of Fresh Fish 1953-1963

Year	Local (cwts.)	Wholesale Value	Imported (cwts.)	Wholesale Value
		£		£
1953	19,669	135,855	4,221	33,564
1954	17,243	114,299	3,539	34,732
1955	17,366	135,017	2,676	25,141
1956	16,775	135,720	2,099	23,635
1957	18,015	168,285	2,022	24,387
1958	21,101	204,115	2,478	22,387
1959	20,791	200,729	1,355	15,162
1960	24,341	227,053	1,751	18,809
1961	27,006	236,601	1,610	21,345
1962	26,343	248,770	1,167	15,658
1963	29,815	283,207	976	14,786

TABLE 17

Monthly Return

Locally Caught Fresh Fish

1963

Species	January Rtal	February Rtal	March Rtal	April Rtal	May Rtal	June Rtal	July Rtal	August Rtal	September Rtal	October Rtal	November Rtal	December Rtal	Total Rtal
1. Accola... ...	—	—	—	—	368	264	619	750	245	272	—	—	2,518
2. Arznell/Munqara	1,133	12,524	19,557	33,385	31,137	9,254	2,152	—	—	—	950	3,633	113,755
3. Boll/Ham/Raj	1,247	846	1,623	4,919	4,399	4,873	3,377	2,713	—	—	685	1,620	26,302
4. Burqax ...	—	345	636	327	—	515	—	—	—	—	—	—	1,823
5. Cerna	202	—	333	242	819	1,451	2,097	1,826	507	488	352	—	8,317
6. Dentici ...	—	—	—	498	600	813	569	649	347	403	782	618	5,279
7. Dott/Hanzir ...	—	—	388	903	1,028	2,414	4,343	2,832	—	—	—	—	11,908
8. Fanfri	—	—	—	—	—	—	—	9,413	29,607	14,835	29,069	716	83,640
9. Fekruna ...	—	—	—	—	—	—	—	—	380	—	—	—	380
10. Gallina ...	243	221	—	912	1,522	2,566	1,383	—	—	—	—	265	7,112
11. Gambli ...	986	1,710	1,387	434	—	1,102	539	682	—	—	—	635	7,475
12. Huta Kabla ...	834	859	1,980	—	—	—	—	—	—	—	1,421	1,137	6,231
13. Imsell	—	1,064	331	—	—	—	—	—	537	—	—	—	1,932
14. Kahli	1,454	1,136	1,385	1,086	1,616	2,316	1,898	1,301	535	485	674	2,581	16,467
15. Kavalli ...	—	—	—	802	—	8,246	20,714	22,564	—	—	—	—	52,326
16. Klamari ...	299	376	376	562	299	269	164	454	—	—	—	614	3,414
17. Lacci	—	—	772	—	575	1,749	—	—	—	—	—	—	3,096

TABLE 17

Monthly Return

Locally Caught Fresh Fish — (cont.)

1963

Species	January Rtal	February Rtal	March Rtal	April Rtal	May Rtal	June Rtal	July Rtal	August Rtal	September Rtal	October Rtal	November Rtal	December Rtal	Total Rtal
18. Lampuki ...	–	—	–	.	.	.	.	76,029	271,046	333,841	70,939	883	752,738
19. Lipp... ...	—	—	—	323	646	. .	—	—	—	.	. .	-	969
20. Kakku ...	—	—	—	—	.	—	2,064	2,794	500	.	—	—	5,358
21. Mazzola ...	1,532	838	2,447	3,996	4,261	5,670	6,031	1,905	317	–	865	2,268	30,130
22. Merluzz ...	—	—	209	—	225	1,305	—	. .	—	—	—	—	1,739
23. Morina/Gringu	1,692	430	867	1,287	2,543	3,250	2,508	1,036	—	—	450	259	14,322
24. Moruna	—	—	—	—	431	—	—	—	—	—	—	—	431
25. Mulett ...	—	311	290	255	—	—	342	—	—	217	496	284	2,195
26. Pagell	880	1,644	2,245	897	466	455	257	328	—	—	865	1,192	8,901
27. Pagri	—	—	—	429	479	1,204	936	—	—	—	372	204	3,952
28. Pixxiplamtu ...	—	—	—	—	—	—	—	—	—	280	541	340	1,161
29. Plamtu ...	784	261	356	—	—	—	—	1,608	—	—	325	211	1,937
30. Qarnit	1,159	2,615	2,551	1,990	2,771	2,756	1,403	565	1,024	2,655	1,907	2,489	30,928
31. Sargu	279	320	726	622	504	838	393	33,064	223	204	387	345	5,406
32. Sawrell ...	52,869	20,210	11,061	18,123	23,003	37,595	66,891	—	616	—	374	17,126	280,932
33. Sicc	627	711	473	286	333	320	403	—	—	—	—	242	3,395
34. Sirran ...	1,579	1,202	2,359	950	964	—	413	—	—	—	790	1,568	9,825
35. Skorfon ...	—	—	—	—	228	—	356	—	—	—	—	—	584

TABLE 17

Monthly Return

Locally Caught Fresh Fish — (cont.)

1963

Species	January Rtal	February Rtal	March Rtal	April Rtal	May Rtal	June Rtal	July Rtal	August Rtal	September Rtal	October Rtal	November Rtal	December Rtal	Total Rtal
36. Spurli	—	—	—	—	229	—	—	—	—	—	—	238	467
37. Tonn	425	—	—	—	—	—	—	1,638	—	—	—	1,313	3,376
38. Tonnaggi ...	—	—	—	—	—	—	—	—	38,405	15,434	5,175	—	59,014
39. Trill	899	2,390	3,887	3,289	554	3,179	1,308	933	—	264	—	1,164	17,867
40. Tumbrelli ...	755	392	3,043	2,113	793	—	—	311	—	—	11,292	6,490	25,189
41. Vopi/Voparella	18,565	19,425	10,387	14,933	27,086	34,172	27,369	15,230	1,704	3,160	31,135	21,771	234,927
42. Xilep	216	1,214	810	511	1,730	1,017	1,220	429	544	814	2,169	1,268	11,942
43. Xkatlu ...	578	332	1,130	1,030	1,796	1,995	475	653	—	—	—	207	8,196
44. Paghrun ...	407	—	482	634	910	1,114	1,090	—	—	—	—	—	4,637
45. Hut Iehor ...	1,456	2,259	2,782	3,044	4,452	7,068	4,504	4,082	1,366	514	2,532	1,595	32,654
Total ...	94,100	73,635	74,873	98,772	126,767	137,770	155,818	183,789	347,903	373,866	167,547	73,276	1,908,116

TABLE 18

Comparative Summary of Fresh Fish Landings 1962-1963

YEAR	LOCAL				IMPORTED				Total Quantity Rtal
	Quantity Rtal	Wholesale Value	Retail Value	Average Ret. Price per ratal	Quantity Rtal	Wholesale Value	Retail Value	Average Ret. Price per ratal	
1962	£	£	£			£	£		
January	80,831	11,012	16,218	1/	990	174	223	1/6	81,821
February	66,458	9,480	14,208	4/3	800	172	212	5/4	67,258
March	61,050	10,314	13,814	4/6	1,480	1,328	1,703	1/7	68,530
April...	70,527	12,487	17,456	4/11	10,300	1,960	2,475	1/10	80,827
May	92,628	13,961	20,811	1/6	6,370	1,002	1,320	4/2	98,998
June...	127,545	17,036	25,708	1/	30,370	7,605	9,883	6/6	157,915
July	149,019	16,917	27,555	3/8	15,550	2,913	4,024	5/2	164,569
August	201,208	33,551	47,318	4/9	1,554	100	555	7/2	202,762
September	238,164	41,655	66,976	5/8	1,240	104	197	3/2	239,404
October	310,372	46,614	62,975	4/	—	—	—	—	310,372
November	218,148	26,350	36,496	3/4	—	—	—	—	218,148
December	70,005	9,393	12,876	3/8	—	—	—	—	70,005
Total	1,685,955	248,770	362,411	4/3	74,654	15,658	20,592	5/6	1,760,609

TABLE 18

Comparative Summary of Fresh Landings 1962-1963 — (cont.)

YEAR	LOCAL				IMPORTED				Total Quantity Rtal
	Quantity Rtal	Wholesale Value	Retail Value	Average Ret. Price per ratal	Quantity Rtal	Wholesale Value	Retail Value	Average Ret. Price per ratal	
1963	£	£	£			£	£		
January	94,100	9,893	15,379	3/3	1,410	257	361	5/2	95,510
February	73,635	11,107	14,760	4/-	—	—	—	—	73,635
March	74,873	13,116	17,407	4/8	6,800	1,218	1,857	5/6	81,673
April...	98,772	15,646	21,253	4/4	3,582	636	904	5/1	102,354
May	126,767	18,011	24,620	3/11	9,796	2,685	3,664	7/6	136,563
June...	137,770	20,595	29,351	4/3	22,575	5,924	8,746	7/9	160,345
July	155,818	18,144	25,835	3/10	14,969	3,443	4,990	6/8	170,787
August	183,789	32,628	45,034	4/11	—	—	—	—	183,789
September	347,903	54,353	75,358	4/4	—	—	—	—	347,903
October	373,866	47,088	75,326	4/–	—	—	—	—	373,866
November	167,547	27,964	36,677	4/4	2,160	420	582	5/5	169,707
December	73,306	13,762	17,651	4/10	1,210	203	300	4/11	74,516
Total	1,908,146	283,207	398,651	4/2	62,502	14,786	21,404	6/10	1,970,648

TABLE 19

1963

Statement showing Loans and Grants issued from 1.1.63 *to* 31.12.63

under

***Craft** — Engines — Fishing Equipment*

	CRAFT		ENGINES		EQUIPMENT		TOTAL
	Loans	Grants	Loans	Grants	Loans	Grants	
	£	£	£	£	£	£	£
1	3,600	2,160	—	—	—	—	5,760
2	2,296	1,378	—	—	—	—	3,674
3	1,650	990	—	—	—	—	2,640
4	1,198	718	—	—	—	—	1,916
5	1,175	705	—	—	—	—	1,880
6	2,025	1,215	—	—	—	—	3,240
7	3,075	1,845	—	—	—	—	4,920
8	2,640	1,584	—	—	—	—	4,224
9	1,475	885	—	—	—	—	2,360
10	—	—	—	292	—	—	292
11	—	—	—	496	—	—	496
12	—	—	—	564	—	—	564
13	—	—	—	100	—	—	100
14	—	—	—	100	—	—	100
15	—	—	—	226	—	—	226
16	—	—	—	264	—	—	264
17	—	—	—	100	—	—	100
18	—	—	—	619	—	—	619
19	—	—	—	114	—	—	114
20	—	—	—	105	—	—	105
21	—	—	—	76	—	—	76
22	—	—	—	196	—	—	196
23	—	—	—	288	—	—	288
24	—	—	—	138	—	—	138
25	—	—	—	—	600	240	840
26	—	—	—	—	1,700	680	2,380
27	—	—	—	—	250	100	350
28	—	—	—	—	200	80	280
29	—	—	—	—	250	100	350
30	—	—	—	—	—	20	20
31	—	—	—	—	67	27	94
32	—	—	—	—	250	100	350
33	—	—	—	—	225	90	315
34	—	—	—	—	120	48	168
35	—	—	—	—	140	56	196
36	—	—	—	—	100	40	140
	19,134	11,480	—	3,678	3,902	1,581	39,775
	30,614		3,678		5,483		

TABLE 20

Agriculture

i) *Ordinary Expenditure* 1959-64

	A. Personal Emoluments					B. Other Charges				
	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64
	£	£	£	£	£	£	£	£	£	£
Office	17,321	18,864	21,943	20,398	20,090	—	—	—	—	—
Advisory Service	1,810	2,557	3,898	4,971	6,236	—	—	1,698	1,491	1,700
Govt. Farms	4,257	4,675	5,448	5,619	5,656	42,853	44,747	40,941	41,917	37,665
Gardens, Plantations, Afforestations ...	24,411	25,107	31,128	29,617	30,904	29,123	27,826	31,029	27,922	28,295
Plant Pathology, Viticulture & Oenology	1,818	2,476	2,568	2,590	3,048	18,673	18,597	14,388	13,475	14,595
Marketing	2,261	3,008	3,243	4,039	5,403	1,290	1,279	1,105	1,324	1,703
Veterinary Services	13,678	14,632	17,212	17,200	17,715	6,377	6,724	7,193	7,621	7,459
Fisheries	—	—	—	12,137	12,642	—	—	—	20,918	20,585
General Service...	—	—	—	—	—	9,807	9,852	7,539	8,670	8,922
Subsidies...	—	—	—	—	—	1,261	1,606	1,706	76,607	68,295
	65,556	71,319	85,440	96,571	101,694	109,348	108,611	104,599	199,945	189,219

ii) *C. Special Expenditure* 1959-64

Actual — 1959/60

	£
Purchase of a truck	491
Purchase of a Sprinkler	2,035
Purchase of two cars and two motor cycles	920
Purchase of livestock for Government Farm	1,025
Purchase of an electrically-driven pump	50
Purchase of an adding machine	255
Purchase of a safe	56
	4,832

Actual — 1960/61

	£
Purchase of a truck	621
Purchase of livestock for Government Farm	423
Puchase of two cars and two motor cycles (revote)	40
	1,084

Actual — 1961/62

	£
Purchase of a truck	207

Actual — 1962/63

	£
Erection of a Cold Room at the Buskett Winery	495
Agricultural Delegation to Israel	787
	1,282

Estimates 1963/64

	£
Purchase of livestock for Government Farm	500

iii) *E. Co-operatives — 1959/64*

	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64
A. Personal Emuluments	£2,039	£2,381	£2,709	£2,684	£2,844
B. Other Charges	5,399	7,160	7,639	6,451	7,165
C. Special Expenditure	130	—	—	—	—
	£7,568	£9,541	£10,348	£9,135	£10,009

iv) *F. Pitkali Markets — 1959/64*

	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64
A. Personal Emuluments	£16,930	£17,130	£18,853	£18,776	£19,237
B. Other Charges	3,731	2,932	3,696	3,128	3,608
C. Special Expenditure	—	431	—	—	—
	£20,661	£20,493	£22,549	£21,904	£22,845

v) *Capital Expenditure* — 1959/64

	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64
	£	£	£	£	£
Agriculture					
a) *Colonial Development & Welfare Schemes*					
1. Cattle disease eradication scheme A 3897	23,507	16,393	24,604	25,800	25,396
2. Animal vaccination scheme D 4025 ...	5,679	4,626	3,832	2,982	3,863
3. Incentive grants D 4250	4,259	8,194	4,665	5,042	4,282
4. Expenses i.c.w. experts D 4233	16,970	14,284	6,422	6,218	3,724
5. Training of personnel abroad D 4233 ...	8,117	7,645	5,497	3,347	2,783
6. Adopted farms D 4234	204	431	994	143	3,362
7. Grants to farmers D 4250	569	13,262	9,013	9,706	19,456
8. Equipment of crop protection contract spraying service D 4237	2,143	2,176	414	2,201	2,667
9. Afforestation D 3819	24,416	27,431	22,237	14,946	10,916
10. Modernizing the Civil Abattoir D 3912	7,967	3,753	2,483	2,512	1,000
11. Improvements to Public Gardens ...	—	—	—	—	9,000
12. Equipment for Agricultural Chemistry Laboratory	—	—	—	—	460
	£104,931	£98,195	£80,161	£72,897	£86,909
b) *Colonial Grants & Loans Scheme*					
13. Purchase & adaptation of R.N. Abattoir...	—	—	—	—	2,000
c) *Loan Scheme*					
14. Loans to farmers	19,368	39,887	36,115	34,933	34,697
Fisheries					
Colonial Development and Welfare Schemes					
1. Grants to Fishermen	4,920	—	—	—	20,000
2. Expropriation of alnd and old fishponds at Marsaxlokk	—	2	—	—	8,998
3. Equipment for new slipway at Marsaxlokk	—	143	306	151	5,402
	4,920	145	306	151	34,400

v) *Capital Expenditure* — 1959/64 — (cont.)

	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64
	£	£	£	£	£
Colonial Grants & Loans Scheme					
4. Sundry Works at Fishing Centres ...	2,000	2,000	1,998	2,002	2,001
Loan Scheme					
5. Loans to Fisherman	—	—	—	—	28,000
Agriculture and Fisheries					
Schemes completed					
Agriculture					
15. Poultry Development D 4238	6,458	294	—	—	—
16. Gozo Abattoir D 4234	—	324	—	—	—
17. Livestock Centre Gozo D 4234	1,210	—	—	—	—
18. Grinding Machinery Centre D 4234 ...	1,694	—	—	—	—
19. Farm Machinery for Gozo D 4234 ...	66	—	—	—	—
	9,428	618	—	—	—
Fisheries					
6. Raising the level of part of mole at Marsaxlokk D 3854	3,973	—	—	—	—
7. Building of a Fisheries Station D 3854	18,797	—	—	—	—
	22,770	—	—	—	—

vi) *Revenue* 1959-64

Item	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64
VII. Fees of Office & Reimbursements					
A. Fees of Office					
Agriculture abd Fisheries					
Fisheries					
24. Fees for Fish-hawker Arm Badges ...	15	12	12	10	15
25. Permits and licences	42	52	58	43	60
Veterinary Service					
33. Abattoir fees	19,217	17,108	17,344	19,006	18,500
Agriculture					
34. Licences, certificates etc.	284	251	261	522	350
	19,558	17,423	17,675	19,581	18,925
B. Reimbursements					
Fisheries					
67. Sale of fishing equipment	12,163	11,159	10,505	8,296	10,000
68. Sale of fish from experimental fising vessel	4,783	4,433	1,283	2,115	6,000
69. Commission on sales of imported fish...	333	408	400	250	400
Agriculture					
89. Sale of vegetables from Govt. Farm ...	3,055	2,529	1,694	2,159	2,000
90. Sale of livestock from Govt. Farm ...	6,214	8,051	4,962	4,858	5,000
91. Sale of dairy produce	3,965	3,566	3,554	3,920	3,300
92. Sale of vine rootlings etc. from vine nurseries...	388	651	400	51	10
93. Sale of trees, plants, etc. from public plantations	1,167	1,145	1,649	1,521	1,200
94. Sale of fruit etc. from San Anton Gardens	674	875	628	606	600
95. Sale of fruit etc. from Buskett Gardens	1,233	2,117	1,575	1,145	2,000
96. Sale of fruit etc. from Dar-il-Ljuni Gardens	102	120	118	53	100
97. Sale of hatching eggs and poultry from Govt. Farms	4,810	7,526	7,784	6,133	8,000
B/F	38,887	42,580	34,552	31,107	38,610

vi) *Revenue* 1959-64 — cont.)

Item	Actual 1959/60	Actual 1960/61	Actual 1961/62	Actual 1962/63	Estimates 1963/64
b/f	38,887	42,580	34,552	31,107	38,610
98. Sale of honey	64	—	—	12	20
99. Inspection of Agricultural produce ...	1,186	849	561	450	700
100. Sale of wine	1,589	763	747	258	500
101. Service by skilled personnel of the Department on behalf of third parties	7,931	7,373	4,439	2,760	7,000
Veterinary Services					
102. Maintenance of dogs kept under observation	83	45	67	78	100
Miscellaneous Reimbursements					
112. Miscellaneous	2,729	489	620	638	800
	52,469	52,099	40,986	35,303	47,730
XIII. Interest					
3. Interest on loans	2,964	2,814	2,718	2,198	2,700
XIV. Widows and Orphans					
Pension Act 1927					
1. Contributions	978	975	1,016	1,080	1,080
XVII. Miscellaneous Receipts					
4. Miscellaneous	2,304	1,304	2,099	189	900
5. Repayment of loans	417	4,226	12,114	18,971	22,300
	2,721	5,530	14,213	19,160	23,200
Summary					
VII. A. Fees of Office	19,558	17,423	17,675	19,581	18,925
B. Reimbursements	52,469	52,099	40,986	35,303	47,730
XIII. Interest	2,964	2,914	2,718	2,198	2,700
XIV. Widows and Orphans	978	975	1,016	1,080	1,080
Pension Act 1927					
XVII. Miscellaneous Receipts	2,721	5,530	14,213	19,160	23,200
	78,690	78,841	76,608	77,322	93,635